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A BI-MONTHLY MAGAZINE OF
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THE MIGRATION OF THE CACKLING GOOSE

WITH THREE ILLUSTRATIONS

By FREDERICK C. LINCOLN

WRITING in 1887, Dr. E. W. Nelson said that *Branta canadensis minima* was "the most common and generally distributed goose found breeding along the Alaskan coast of Bering Sea" (Report upon Natural History Collections Made in Alaska between the Years 1877 and 1881, p. 86). This diminutive *Branta* is essentially a coastal species during the nesting period and is not known at any season to extend the limits of its range far into the interior. The breeding range extends from the westernmost Aleutians (Attu Island) east to the northern shores of the base of the Alaska Peninsula (Bristol Bay and Nushagak River), thence northward along the coast of Alaska to the delta of the Yukon River, to Norton Sound, Kotzebue Sound, and probably to Point Barrow. The two last-named regions are included on the authority of Doctor Nelson (*loc. cit.*), who stated that "they were found in abundance about the head of Kotzebue Sound, and were seen at various points along the Arctic coast to the vicinity of Point Barrow", and of A. M. Bailey (Condor, xxvii, 1925, p. 203), who reports the collection of specimens at Wainwright, near Point Barrow, in July.

It is peculiarly significant that practically no observers report *Branta c. hutchinsi* along the immediate coastal areas, always stating that *hutchinsi* is found farther inland although the actual distance from the coast may be relatively short. Accordingly, while *minima* appears to enjoy its breeding grounds without the admixture of any considerable numbers of a closely related form, it is nevertheless true that its breeding range is met and to a certain degree overlapped by that of the larger form. The writer has no desire to enter into the controversy as to the validity of *hutchinsi* as a subspecies of *Branta canadensis*, but it seems to him that there are perfect conditions for the occasional crossing of *minima* with the more eastern birds, whether they be called *hutchinsi* or *canadensis*. Not only is the breeding range of *minima* restricted to the Aleutian Islands and the coast of Alaska bordering on Bering Sea and the Arctic Ocean, but, as will be noted later, the main winter range is to a still greater extent restricted.

The investigations of Doctor Nelson, recently supplemented by additional work in the Territory, have indicated that the center of abundance for the Cackling Goose is the tundra region of the delta of the Yukon, and it is with the movements of these birds that the present paper is chiefly concerned.

During the spring and summer of 1924 a cooperative expedition, by O. J. Murie, of the Biological Survey, and Herbert W. Brandt, of Cleveland, Ohio, was engaged in extensive ornithological work in the area about the mouth of the Yukon, chiefly in

the vicinity of Hooper Bay. In the course of the season (between July 14 and July 31, 1924) about 250 specimens of *Branta c. minima* were marked with Biological Survey bands. From these, 39 return records are now available. The birds were banded at a point on the north shore near the head of Igiak Bay, at another point a few miles to the east on the Kokechik River, and at a third near the Eskimo village of Kashunuk (see figs. 39 and 40). At the last-named point a "drive" was made, with the help of the natives, which resulted in gathering into a net corral a large number of young birds not yet capable of flight. Fully adult birds rendered helpless by the molting of their primaries also are caught for food by the Eskimos in this same manner, but Mr. Murie told the writer that their 1924 drive included only one or two adults.

Before considering the 39 returns received from these banded birds it will be of interest to refer to their spring arrival and departure as reported by Doctor Nelson and Mr. Murie.

According to Doctor Nelson (*loc. cit.*) the Cackling Geese are the first geese to arrive at St. Michael and at the mouth of the Yukon River, usually making their appearance from April 25 to 30; the fall migration occasionally starts as early as August 20 but usually takes place in September. Mr. Murie states that the birds were later in arriving in 1924, as they were first noted by his party on May 1, when a flock of about one hundred was seen. From then on, there was a gradual infiltration,



Fig. 39. DRIVING CACKLING AND EMPEROR GESE TOWARD THE NET AT KASHUNUK SLOUGH, ALASKA, ON JULY 31, 1924.

Photo by O. J. Murie, Biological Survey.

but it was not until May 20 that the geese were actually common. Another flight was observed from June 24 to 26. These were associated with the larger Emperor Geese, and Mr. Murie gave it as his opinion that these late arrivals were yearling birds. From the observations of several students, the Alaska Peninsula and the Aleutian Islands constitute a natural autumn rendezvous for birds preparing to migrate. Luxuriant crops of berries, mostly the crowberry (*Empetrum nigrum*), grow in these places and are largely fed upon by the geese. The birds will remain to feast upon the berries occasionally until the middle of November.

The accompanying map (fig. 41) shows the apparent course pursued by the Cackling Geese from Hooper Bay to their winter feeding grounds. The northernmost recovery of a bird in the southward flight was no. 302058, killed at Moresby

Island, British Columbia, on October 25, 1924. In the light of this single record it might be construed that the flight from the base of the Alaska Peninsula is southeast across the Gulf of Alaska, the birds reaching the coast in the vicinity of the Queen Charlotte Islands; but while such a course would be obviously shorter, it seems more probable that there is a rather close adherence to the coastline. Records of banded birds from this sparsely settled region will always be few, and it would be unwise to draw definite conclusions from isolated reports.

At the time that the bird was killed at Moresby Island, others banded at the same time had already reached the United States, for on October 15, no. 5055 was killed at Copalis Beach, Washington, and no. 303027 at Tule Lake, Modoc County, California, from which it might be concluded that the southward movement of this species, even of birds from a common breeding ground, is not made en masse, but rather as a series of "waves" consisting of small flocks.



Fig. 40. CACKLING AND EMPEROR GEES IN THE TRAP READY FOR BANDING AT KASHUNUK SLOUGH, ALASKA, JULY 31, 1924.

Photo by O. J. Murie, Biological Survey.

From the data obtained, the flight follows the coastline southward to near the mouth of the Columbia River. No. 302083 was taken at Fort Stevens, Oregon, on October 28; and no. 302092 four and one-half miles south of Hillsboro, Oregon, on October 24, indicating that after reaching the mouth of the Columbia, the direction of flight, at least for a part of the birds, is eastward and follows that stream for a short distance and then continues the north and south line by way of the Willamette River Valley.

No. 303055 was killed two miles east of Tillamook, Oregon, on October 27; this suggests the probability of a further coastwise flight south of the Columbia River for a part of the birds. This supposition is given strength through the recovery of no. 303072, at Evans Creek, within fifteen miles of the Rogue River, Jackson County,

Oregon, on April 30, 1925, a late date for geese to be in that region. The bird was probably then on its way north, for it was evidently not a crippled bird, as it was one of a flock of fifteen.



Fig. 41. LOCALITIES FROM WHICH BANDS HAVE BEEN RETURNED THAT WERE ATTACHED TO CACKLING GEESSE IN THE VICINITY OF HOOPER BAY, ALASKA, DURING THE PERIOD JULY 14 TO JULY 31, 1924.

latter case the bird was taken within a relatively short distance of the place where it was banded a year previously.

As shown by the returns received, the winter range of these birds is in the region of Tule Lake (Oregon and California) and in the Sacramento Valley, California. The former area is represented by the records of nine birds taken between October 24 and December 15. The points of capture are well distributed around the shores of the lake. In the Sacramento Valley twenty recoveries have been reported in an area extending from near the city of Sacramento on the south to Willows, Glenn County, on the north. The records are grouped principally in the vicinity of Willows, Williams, Colusa, and Arbuckle, in the western part of the valley, with a few from southwestern Butte County (Biggs), western Yuba County (Marysville), and Sutter County (Sutter and Meridian). The earliest record for this region is that of no. 303022 taken at Willows on October 23. There are six records of recoveries for November, nine for December, and two for January, the latest being for no. 302034, taken at the Orland Gun Club Preserve, in Glenn County, on January 7. All these returns come from a restricted territory not exceeding 75 miles long and 30 miles wide, and this, together with the still smaller area around Tule Lake, forms, if the evidence may be so interpreted, the principal winter range of the Cackling Goose at the present time. Two of the banded birds, killed at Los Baños and New-man on October 19, 1924, and January 4, 1925, respectively, represent the points farthest south. Occasionally, but very rarely, this species has been detected wintering as far south as Ventura and San Diego counties.

The northward flight of the banded birds furnishes no information other than the record previously referred to, from Evans Creek, Oregon, April 30, 1925, and another (no. 303073) killed by a native at Nelson Island, Alaska, on June 1, 1925. In the

In conclusion it is proper to refer to two "short time" returns obtained by Mr. Murie: the remains of the birds that carried nos. 5054 and 5056, banded at Igiak Bay on July 14, and which were found a few hours later at the nest of a Snowy Owl.

United States Bureau of Biological Survey, Washington, D. C., March 20, 1926.

ANGLES AND SPECULATIONS ON MIGRATION

By J. T. NICHOLS

PRIMARILY the line of bird migration is north (in spring) and south (in fall). It does not flow over the entire country as a uniform sheet of moving birds, but gathers in channels which tend to follow coastlines, river valleys, and sometimes ridges of high land. These channels are spoken of as fly-ways or migration routes. There is a main migration route along the ocean shore of Long Island, New York, not north and south but approximately east and west, following the trend of the coast. Such routes may be spoken of as *deflected* routes. Southbound this route joins that down the Hudson valley to continue down the Atlantic coast; and furthermore, northbound, the main Atlantic coast stream, whereas the larger part of it probably follows up the Hudson valley, sends a branch, though less strong than in autumn, eastward along the coast of Long Island. It is the purpose here to call attention to the branching character of migration routes and differentiate between the two types of branching, *afferent* in the first and *efferent* in the second case.

The writer's home lies in central Long Island, sufficiently back from the shore and away from any migration route to give it a minimum number of transient individual birds. Here, during the southward migration just passed, he noticed one morning a considerable number of Myrtle Warblers flying north. He explains this peculiar phenomenon as *distributional* movement away from the concentration in the migration route a few miles to the south. That such distributional movement is sufficiently general to entitle it to a place in the nomenclature of migration is not yet satisfactorily proved, but the probabilities are that it is. It is only reasonable to suppose that a converse *collective*, or *afferent* movement also exists tributary to each migration route and is equally, or more, general.

Here, at this particular point, in central Long Island, as has been said, the number of transient individuals is at a minimum. The Barn Swallow does not breed nearby and one sees but a few each spring, scattered birds flying steadily, slightly north of east in active migration, parallel with the main stream off to the south but too far removed to be in direct touch with it, visual or otherwise. The direction being east rather than north, these birds can not be classified as part of the primitive northward migratory drift. They are entitled to special classification as *parallel* migrants. The accuracy with which they keep the direction of the migration route they are paralleling is one of the details which leads one to question how far the travelers on such a route are dependent on the visual guides which would enable them to follow the same.

Shorebirds migrate very largely by day, and their passage along the aerial highway which follows the south shore of Long Island is therefore readily observable. Southward bound, the direction of flight is from east to west, but a minority of birds of the same species fly from west to east. This leads to an hypothesis that in concluding a migratory journey birds may retrace their course for a short space, perhaps seeking

again particular haunts just passed over. That there exists any *reverse* movement of this sort to be taken into account is by no means proved, but it is a chance that may well be considered.

Physiographically deflected migration routes, mentioned in an earlier paragraph, are familiar enough; that there exist meteorologically deflected routes is so far purely hypothetical, but a reasonable enough hypothesis supported by certain scattered data. In May, 1885, small sandpipers were observed some 500 miles off New York flying in a southeasterly direction when they should have been bound north (W. A. Jeffries, *Auk*, III, 1886, pp. 131-132). Sometimes at this season a succession of cyclonic disturbances parallels the Atlantic coast of North America, causing a succession of heavy northeasterly and northwesterly winds there. In such cases, farther out to sea favoring southeasterly and southwesterly winds would prevail; and the birds observed may have been seeking a northward route in these more easterly longitudes.

Study of the southward migration of those species of shore birds which return from the north in July and August leads to the view that at least many individuals of these have a late summer range within which they linger, and that their active southward flight is composed of two parts, first from breeding grounds to late summer range, second from late summer range to winter grounds. Probably the migrations of many birds are more or less composite in this way, and an increased abundance is frequently observed immediately preceding the final departure of a species, indicative of active migration following a period of comparative quiescence.

Considerable bird banding data recently reviewed by the writer tends to confirm his view, or perhaps it should be called an hypothesis, that the migration of any species, as a whole, is a composite affair made up of the independent behavior of individuals or groups of individuals, each such (conditions permitting) moving with remarkable precision in time. Admitting this precision in time (almost to a day from year to year) there are two obvious controls which might make it possible, a long range time sense very likely associated with glandular action, and the elevation of the sun (an astronomical consideration). Unlikely as it may appear off-hand, he is tempted to believe this latter an important factor. (See Cartwright and Harrold, *Auk*, XLII, 1925, pp. 233-241.)

In discussions of the underlying causes of migration there is sometimes expressed an inability to understand why birds leave the tropics to breed in high latitudes released by the retreat of winter. The simple law that nature abhors a vacuum is perhaps quite sufficient to account for it; but, in raising a family, the advantage of the long days, such as never occur in the tropics, should not be lost sight of.

Just one more point of view in closing: It is that there are migrant birds of any species which are pressing on their environment, attempting to breed or winter beyond the limits of their range, to migrate early or to linger late. These account in a measure for the fluctuations in character of the migration from year to year. When by chance the climate and other conditions spell success for their venture they tend to repeat in the ensuing year and one should look for an explanation of the occurrence of birds in one year as much in their dates and numbers, and in the weather, of the immediately preceding years, as in the weather conditions of the year in question.

American Museum of Natural History, New York City, April 22, 1926.

BREEDING BIRDS OF A WHITE MOUNTAINS LAKE

WITH FOUR ILLUSTRATIONS

By E. A. GOLDMAN

THE WHITE MOUNTAINS of Arizona rise steeply from near the southern edge of the Mogollon Plateau in the extreme eastern part of the state. The plateau here slopes upward on the north from the Little Colorado River Valley to a general level at 8,500 to 9,000 feet, skirting the higher mountains where the country is largely open, rolling prairie, interrupted here and there by wooded ridges and low peaks.

Mount Thomas, more familiarly known as "Old Baldy", the dominant peak of the White Mountains, reaches an altitude of 11,496 feet. Nestling in a little valley at about 9,000 feet, near the eastern base of this mountain lies Marsh Lake, locally known also as "Big Lake." Although not large in the ordinary sense as applied to lakes elsewhere, Marsh Lake covers a sizeable area for the generally dry, well-drained region in which it is located. Along the southern shore a Canadian zone forest of firs and spruces extends from the flank of the mountains down to near the water. From the northern rim of the slight depression holding the lake, the outlook is over the rolling-prairie surface of the plateau.



Fig. 42. INTERIOR OF MARSH LAKE, WHITE MOUNTAINS, 9000 FEET ALTITUDE, ARIZONA, JUNE 20, 1915; SHOWS PLANT ASSOCIATIONS AFFORDING NESTING COVER FOR WATERFOWL.

Field work for the Biological Survey during the early summer of 1915 by Dr. Hartley H. T. Jackson and the writer included visits to Marsh Lake, where investigations largely of nesting waterfowl were carried on from June 12 to June 25, and from July 19 to July 21. At the time of our first visit recently melted snow and rain had left the plateau boggy and barely passable for our wagon outfit. Small receding

banks of winter snow still lay in sheltered places near the lake. The lake was about a mile and a half in greatest length and a little more than half a mile in greatest width. A small stream, one of the headwaters of the Salt River, was flowing out near the northeastern corner. The lake is very irregular in contour, owing to sinuous shore lines. We found open water three or four feet deep; but the greater part was marsh consisting largely of sedges standing in water varying from a few inches to ten feet or more in depth. The extent of the marsh evidently varies with the dryness of the season. Patches of tules were growing along the edges of the open water.

With the aid of a canvas boat, hauled about 110 miles from the railroad, we were able to penetrate all parts of the lake area, and to make fairly complete collections of the nesting waterfowl and their eggs. Marsh Lake is of special interest as there are few places where so many species of water birds find favorable nesting conditions at so great an altitude. Recent drought years and over-grazing by domestic stock may have lessened the value of this body of water, however, as a breeding place for these birds.



Fig. 43. NEST AND EGGS OF AMERICAN EARED GREBE AT MARSH LAKE, WHITE MOUNTAINS, ARIZONA, JUNE 14, 1915; LOCATED AMID COARSE SEDGE IN WATER ABOUT TWO FEET DEEP.

Among the birds whose known breeding ranges were, through our records, materially extended are Ring-necked Duck and Virginia Rail. The following list includes only species dependent upon an aquatic environment.

Colymbus nigricollis californicus. American Eared Grebe. About one hundred eared grebes were breeding or preparing to breed. On June 14 we found a colony nesting in the marsh near the open water along the southern side of the lake. Jackson counted twenty-three nests in a space fifteen feet wide and about sixty feet long. No young were seen and a number of nests contained incomplete sets of eggs. On June 20 I revisited the place and found several new nests and several others in the course of construction. The nests were floating masses or platforms of sedge in water about

one and one-half feet deep, partially concealed in tall growing sedges. At some nests the eggs were partially or completely covered with nest material placed by the parent on leaving; at others the eggs, ranging from two to four in number, were exposed. Three eggs to a nest was a common number. Most of the eggs were deeply stained by the wet nest material. Whenever we approached the nests the birds hovered not far away in the open water watching us suspiciously. When we returned to the locality on July 19, we noted that the number of adults in the open water appeared to be about the same as during our stay the previous month. A few young only were seen; perhaps they were not yet venturing out in numbers into the open water.

Sternula albifrons antillarum. Least Tern. A single bird, shot as it flew past the boat on June 15, was the only one seen and it showed no signs of breeding.

Anas platyrhynchos platyrhynchos. Mallard. About twenty pairs were noted in the vicinity of the lake, some of them flying about in small flocks and apparently not yet breeding as late as June 21. Mated pairs were, however, seen as early as June 12. A set of eight eggs, very slightly incubated, was taken on June 16, and the female shot as she flew off. The nest was a rather shallow structure of sedge leaves placed in the

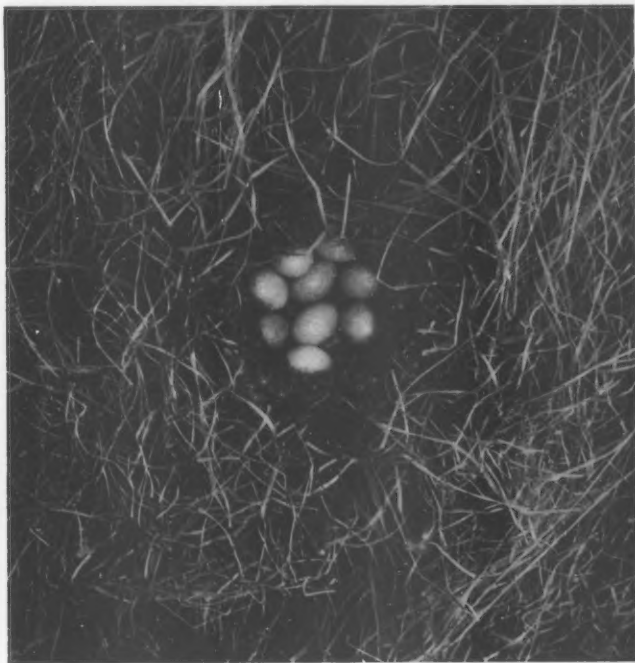


Fig. 44. NEST AND EGGS OF CINNAMON TEAL ON SHORE OF MARSH LAKE, WHITE MOUNTAINS, ARIZONA, JUNE 14, 1915; A DEPRESSION IN GREEN GRASS, LINED WITH DOWN.

green sedge on ground several inches above the water line. The nest was bordered with a few feathers. Another nest found was similar in structure and location. The mallards were wild and usually difficult to approach near enough to shoot.

Querquedula discors. Blue-winged Teal. I shot a single male as it rose out of the sedge in the marsh on June 14. A female killed by Jackson on June 12, in the same vicinity, may have been its mate. No others were noted by either of us.

Querquedula cyanoptera. Cinnamon Teal. We estimated the number of Cinnamon Teal at sixty pairs. No other species of duck at the lake approached this in abundance.

They were usually seen in pairs, except when females were flushed from nests. I found at least a dozen nests in the marsh, and among those located by Jackson was one on the nearly bare shore of the lake. The nests were of sedge, deeply cup-shaped, usually well concealed, and the interior heavily bordered with down with which the parent sometimes completely and evenly covered the eggs on leaving the nest. A nest found on June 14 was barely clear of the water; the nest freshly made of green sedge contained two eggs which were wet underneath. Another nest found on the same date, also barely above the water, was of dried sedge and contained five eggs. A nest found June 19 contained nine fresh eggs. This nest was placed in short sedge on ground clear of water but within six feet of the open lake. It was heavily lined or bordered with down carefully arranged on the inner side high over and partially covering the eggs, the open space in the center barely large enough to hold the sitting bird. The Cinnamon Teal were not so wild as the other ducks seen at the lake and a number of pairs were left unmolested. When in the water they often allowed us to approach quite near before flying, and brooding females sometimes allowed us to approach to within a few feet.

Spatula clypeata ? Shoveller. On June 13 Jackson found a nest that he believed to be of this species. It was in the barren pastured hillside at the northeast end of the lake, about a quarter of a mile from open water and fully forty yards from the nearest marsh grass. The bird was wild and left the nest usually before he had approached within two hundred yards. Several attempts were made to secure the brooding female, but each time it evaded being shot, and finally abandoned the nest, about June 18. The nest, containing seven eggs, was placed under the edge of a small rock, and was composed of down placed upon a base of grass. After the nest was abandoned the eggs, which were originally a bluish olive-green, bleached to a buffish color.

Erisimatura jamaicensis. Ruddy Duck. About a dozen pairs of Ruddy Ducks inhabited the marsh. They spent much time concealed in the marsh or in the small patches of tules, and were seen only occasionally in the open water. A nest containing six eggs was found on June 14, but the parent was absent. The nest was revisited several times and always found uncovered. To determine the owner I finally set a trap and caught the female on June 19. The nest was placed on a well drained spot in the marsh within six feet of open water. It was a shallow structure of sedge with a little down intermixed. Another nest found on June 25 also contained six eggs. It was placed in a bunch of large green sedge standing in water four inches deep, the nest elevated enough to be dry, but shallow. It was lined with a few feathers. I was unable to find the sitting bird on the nest and resorted to trapping as in the preceding instance.

Nyroca americana. Redhead. A flock of six redheads (three males and three females) was seen by Jackson on several occasions. The birds were wild and difficult to approach. On June 22, however, he saw a female dive under the boat, near the shore, and at first mistook it for a grebe. As it swam out into deeper water, raising its bill above the surface, it was recognized and secured. The ovaries showed that the bird would have begun laying in about ten days or two weeks.

Perissonetta collaris. Ring-necked Duck. About fifteen pairs of this duck were noted. They were rather wild and hard to approach except when females sitting on full sets of eggs allowed us to come near before flying off. A nest found on June 19 was built of sedge and placed in the marsh close to open water on ground from which the water had, however, receded. The nest was moderately deep and well bordered inside with down. It contained seven eggs. Another nest, with two eggs when found on June 13, contained seven eggs on June 21. It was placed in the marsh where the water underneath was about an inch deep. Between June 13 and June 21 I visited this nest several times, noting the increase in the number of eggs but not the exact dates they were laid. But the brooding bird was not detected on the eggs until the latter date, when she allowed me to approach to within twenty feet and was shot as she flew off. Sometimes I found the eggs partially covered with nest material, apparently hastily drawn over them by the bird in leaving. Ring-necked Ducks were seen several times flying about in small parties apparently consisting of several pairs.

Botaurus lentiginosus. Bittern. The single bird collected was shot as it flew from the marsh on June 16. No others were seen. The specimen proved to be a female with ovaries slightly enlarged.

Rallus virginianus. Virginia Rail. Jackson found a nest of a Virginia Rail containing twelve eggs on the evening of June 20. He had been lying in the marsh grass awaiting a chance shot at some mallards when he heard a peculiar "chuckling quack" back of him and started to discover its source. He was walking slowly through the dense grass when he felt the bird slip from under his bare foot as he was about to step on the nest. The bird ran about fifteen feet through the grass, then flew a short distance at right angles and dropped into the grass again. The nest was well concealed, built up some five inches above the shallow water of the marsh and fastened to the sedge stems. It was composed of dry sedge leaves and was but slightly hollowed. Two steel traps (no. 1) were set at the base of the nest, and on the morning of June 22 the male bird was in the trap. The following day (June 23) the female was caught.

Porzana carolina. Sora. It is difficult to give an accurate estimate of the number of these birds inhabiting the marsh. They were shy and very seldom seen (two only were flushed in the course of all our work) but their call notes were heard here and there throughout the marsh. The ordinary note, *e-e-k—e-e-k*, was heard at very frequent intervals during the day and very often during the night. The rattling note was heard less often. I found three nests, the first on June 14. The female was trapped at the nest and the eight fresh eggs were taken the next day. Another nest containing nine eggs was found on June 21. The female sitting on the eggs allowed me to approach to within three feet when she slipped off and darted quickly out of sight along a runway leading off through the marsh. She was soon caught in a trap set. A



Fig. 45. NEST AND EGGS OF RING-NECKED DUCK AT MARSH LAKE, WHITE MOUNTAINS, ARIZONA, JUNE 21, 1915; LOCATED IN GRASS AND SEDGE WHERE WATER WAS ABOUT ONE INCH DEEP; DEPRESSION MODERATELY DEEP AND BORDERED WITH DOWN.

trap was left at this nest where I found the eggs were being covered after the female was caught, and the male was taken in one on June 21. The eggs were nearly ready to hatch and were not saved. Another nest found on June 20 contained a single egg. This nest, freshly made, was apparently abandoned after my visit, possibly owing to my disturbance of the sedge near it so soon after the laying of eggs began. Another freshly made nest, of one of these rails, appeared to be ready for the reception of eggs, but was also apparently abandoned when I found it. I succeeded in flushing one bird which rose out of the sedge with cries of alarm, but flew only a few feet and with legs dangling conspicuously dropped into the sedge again at a point too near to enable me to shoot without destroying it as a specimen. All of the nests were of sedge leaves massed in tufts of green sedge about six inches above the surface of shallow water. The species may be said to have been common in June. Returning to the locality on

July 19, we missed the notes which were nearly continuously heard during the evenings and until late at night at the time of our visit the previous month; a few notes only were heard and we assumed that the breeding season was entirely past.

Fulica americana americana. Coot. Probably 250 of these birds were living in the marsh at the beginning of our first visit. Some were affected with a fatal disease. I saw at least twenty-five dead birds and there were doubtless many others in the marsh. Some of these had been dead for a number of days, but others were fresh. Early on the morning of June 20 two which had apparently died during the night were found about twenty feet apart. A small quantity of bloody mucous lay beside each bird. No signs of sickness were noted among the living birds. But few nests were found, considering the number of birds present. A nest found on June 15 contained seven partly incubated eggs. The nest was a platform of sedge fixed to sedge stems but floating in water about one foot deep. I found two other nests, both made of tule stems and floating in rather shallow water among standing tules. Some young, recently hatched and apparently all of the same family, were seen by Jackson on June 25. At the time of our second visit, July 19 to 21, a number of coots, including a few young, were observed. In tramping through the marsh we came upon no fresh dead birds, and it appeared that an epizootic, which caused the deaths noted the previous month, had run its course.

Steganopus tricolor. Wilson Phalarope. Three only were seen swimming close together in the open water of the lake on June 25. One female secured as a specimen had very slightly enlarged ovaries.

Numenius americanus americanus. Long-billed Curlew. A Long-billed Curlew was seen on a mud flat near the lake by Jackson on June 25. The bird was very wild, but was distinctly observed. Upon being approached the bird flew from the marsh to the arid hills, where it was followed but could not be secured.

Oxyechus vociferus vociferus. Killdeer. Probably a dozen pairs of this noisy bird were noted around the lake. No nests were found, but at least seven pairs were suspected of having nests with eggs.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. Perhaps fifty pairs were nesting, mainly in the small patches of tules in the marsh, but some nests also in large sedges. One of the latter category was fastened to sedge stems at a point about a foot above the surface of water a foot deep. The nest was of sedge leaves lined with the finer shreds. The eggs, taken on June 20, were partly incubated. Another nest of sedge leaves fastened a foot above the surface of the water among tules contained young birds on the same date. The antics of the males as they sat about on the tules or rose in the air with feathers ruffled and bills pointing upward, together with their gurgling notes, reminded me of the behavior of some of the troupials of the Tropics. When we revisited the lake in July, the adults, perched or flying about in the tules, were much more in evidence, and the odd notes of the young could be heard. The males had ceased their troupial-like antics and were much more dignified in behavior.

Agelaius phoeniceus neutralis. San Diego Red-wing. About twenty-five pairs of these red-wings were breeding at the lake. The nests were of sedge leaves fastened among sedge stems in the marsh, usually a foot or more over the surface of the shallow water. A set of four fresh eggs was taken on June 13.

Euphagus cyanocephalus. Brewer Blackbird. About fifteen pairs were nesting, mainly in clumps of willows in the vicinity of the lake. A nest in the chimney of an old house contained hatching young on June 25.

Washington, D. C., December 16, 1925.

A REPORT ON THE BIRDS OF NORTHWESTERN ALASKA AND
REGIONS ADJACENT TO BERING STRAIT. PART X [concluded]

WITH TWO ILLUSTRATIONS

By ALFRED M. BAILEY

PALLID HORNED LARK. *Eremophila alpestris arctica*.

An Eskimo boy with a bow and arrow shot one of this species at Wales on June 5. It was the only Horned Lark we secured anywhere in the north.

NORTHERN RAVEN. *Corvus corax principalis*.

A few of these birds were seen daily by Hendee on St. Lawrence Island, where they were preying upon the cliff-nesting birds. The robbers were seen to carry off eggs on several different occasions. I saw ravens on St. Lawrence also, and one at Providence Bay, Siberia, July 6. Late the following winter, when travelling down the coast by dog sled, I first met the species at the Corwin Coal Mine above Cape Lisbourne. One was feeding March 19 on refuse thrown out by the natives. Two were seen the following day at Cape Lisbourne and others a few days later at Kotzebue and at Chamisso Island. They winter in the Arctic, their presence being dependent on food and the protection offered by the mountain ranges. Several were seen about Wales on April 2, and the natives told me a pair nested on the spur of Cape Mountain.

RUSTY BLACKBIRD. *Euphagus carolinus*.

Mr. Brower sent us a Rusty Blackbird that was collected just back of the village of Barrow in July, 1924. He says the birds are not uncommon to the eastward of Barrow near Cape Halkett, where they follow the reindeer herds. The specimen sent, apparently an adult female, was badly mutilated, having been shot with a .22 rifle. It is Museum no. 10904.

ALEUTIAN ROSY FINCH. *Leucosticte griseonucha*.

Hendee observed this species commonly on Unalaska the latter part of September. Rosy Finches frequented the rocky bluffs along the beach, and often their notes could be heard high up on the cliffs when the birds were invisible.

HOARY REDPOLL. *Acanthis hornemanni exilipes*.

Hoary Redpolls were numerous about Nome during June, when they were nesting in willow thickets. Two nests were found June 19, one containing five badly incubated eggs and one with five naked young. The nests were placed within a few feet of the ground and were compactly built. A base of "Alaska cotton" had been used, with the bulk of the nest made from coarse grasses, possibly the stems of the "cotton" plant, and they were lined with a thick layer of ptarmigan feathers. The parent birds sat very close and flushed only when within arm's reach. I took a specimen at Emma Harbor, Siberia, on June 30 and we found them abundant at St. Michael and Cape Blossom July 18 to 23 and August 1.

When going from Wainwright to Cape Prince of Wales by dog sled I saw eight redpolls the middle of March at Cape Beaufort, the last highland along the Arctic coast as one goes toward Barrow, and one was seen at Kotzebue. I was unable to determine the species.

REDPOLL. *Acanthis linaria linaria*.

Hendee collected two of this species at Wainwright June 13, 1922, and between June 17 and 24 they were common. They migrated in small, loose flocks, uttering a feeble call continually. One other was seen in the village on July 5. I found them common along Mint River, near Wales, the second week in July, where they were associated with the Hoary Redpoll.

SNOW BUNTING. *Plectrophenax nivalis nivalis*.

In the vicinity of Nome Snow Buntings were not plentiful and were more or less restricted to the piles of debris thrown up by the dredges. Here they were nesting among the rocks. We found a nest with two eggs at King Island, June 27, and the species was very common at St. Lawrence Island, July 1 to 8. It was also common at Emma Harbor, a few pairs being seen high among the sterile hills, the only signs of wild life noted there. A few were seen at Whalen, July 11, and they were abundant at Point Hope, August 2, young birds on the wing being noted. A few were observed at Demarcation Point, August 15, and they were very common around the

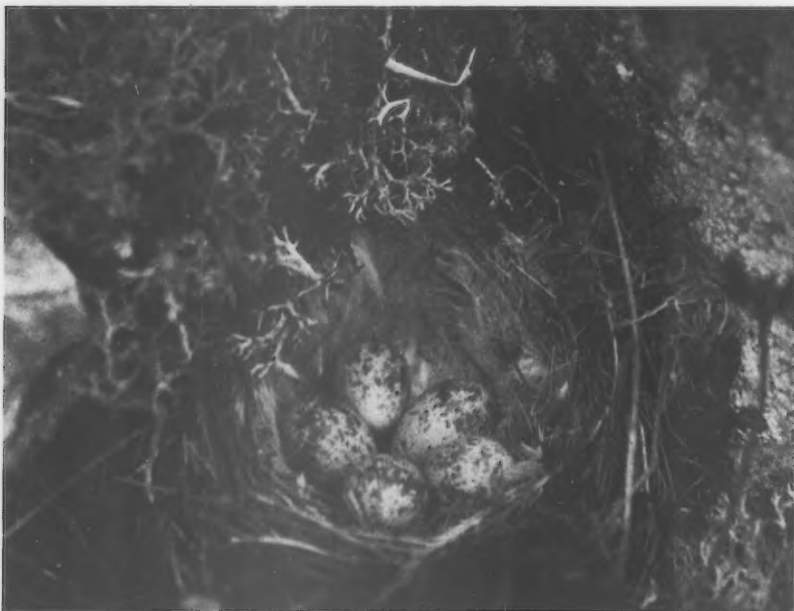


Fig. 46. NEST AND EGGS OF SNOW BUNTING AT WALES, ALASKA; JUNE, 1922.

village at Wainwright during the latter part of August. September was ushered in with gray skies and flurries of snow, so that although there were many birds the first two weeks, they became fewer in numbers until, after the middle of the month, only an occasional straggler was seen, one each on September 19 and 23, and two on October 5.

The first arrival of the spring was a Snow Bunting which was seen in the village on April 11, but it was a month later before others appeared. They were numerous after the middle of May and were beginning to nest on June 15. They chose varied nesting sites, from bird houses erected for their special benefit to old canoe frames, and they nested also under the moss along the tundra ravines. Young birds were hatched in a box on July 7 and other young were leaving the nest on July 13. A set of fresh eggs was also secured on this date. Fully fledged young were seen by the first of August.

I saw a male on a great pressure ridge of ice when following along the coast about ten miles above Cape Beaufort on March 17, and another at the Eskimo village of Wevok under the walls of Cape Lisbourne two days later. Two others were seen at Cape Espenberg on April 2 and the first arrival at Wales was on April 11. Another was seen on May 2, and on May 5 one was noted following the lead offshore. From this date on, they were quite common about the village. The males were the first arrivals, no females being seen until May 25. While the snow remained on the tundra and mountain tops these beautiful little fellows stayed around the village, but as soon as the higher benches were cleared they left, except for a scattered few.



Fig. 47. NEST AND EGGS OF ALASKA LONGSPUR AT WALES, ALASKA; JUNE, 1922.

They began nesting about the middle of June, but their nests were placed so far under the huge boulders which cover the mountains that they were very difficult to secure. Their nesting habits at Wales are in interesting contrast with their habits farther up the coast, where no rocks are to be seen. There they build under the moss and overhanging banks wherever they can hide their nests.

ALASKA LONGSPUR. *Calcarius lapponicus alascensis*.

Very common upon the tundra at Nome during June, where undoubtedly nesting, although we were not successful in locating any nests. They were plentiful at King Island, and a nest with three fresh eggs was taken there from under a large rock, being found by flushing the old bird. They were also numerous at St. Lawrence Island and at Emma Harbor; a nest with four fresh eggs was found at the former place. A few birds were seen at St. Michael July 18 to 23, at Cape Blossom August 1, at Point Hope August 2, and at Demarcation Point August 15, while they proved abundant at Wainwright during August. The greater part of the population of this

species migrated south during the first week in September, when the first snows of the season covered the tundra; a few scattering individuals were seen up to September 13.

At Wainwright the following season they were common, making their first appearance over the ice and around the village, where later they nested in great numbers. The first eggs were found on June 13, the nest being typical of the species in that it was lined with deer hair and ptarmigan feathers, and was placed on the side of a tundra hummock.

The first young were observed on July 1, and a set of fresh eggs was taken the same date. Four males collected on July 8 were molting; two had molted all except the first two or three primaries, and the new feathers were nearly an inch long. The primary coverts were almost full length. Late in July the adults were much dilapidated in appearance, few birds having more than two or three tail feathers. By the first week in August many had completed their fall molt.

A few longspurs were seen at Wales on May 27 and they were abundant the day following. They were beginning to nest by June 11 and a nest containing five eggs was found on June 13. After that date eggs were found commonly upon the tundra in sites similar to those found at Wainwright. The first young were observed on July 4. Hendee found this species abundant at Unalaska early in September.

ALEUTIAN SAVANNAH SPARROW. *Passerculus sandwichensis sandwichensis*.

One of the interesting records made in the Arctic was the taking of one of this subspecies, an adult female, at Wainwright, October 5, 1921. Snow covered the tundra to such a depth that the grass seeds and willow twigs were barely exposed, and ice was already eight inches in thickness on the tundra ponds.

WESTERN SAVANNAH SPARROW. *Passerculus sandwichensis alaudinus*.

These sparrows were fairly abundant around Nome, and a small series was collected June 21, 1921. Two were seen on King Island, June 27, and a few at St. Michael, July 18 to 23. I saw but few at Wales during June, 1922, the first making its appearance on the 11th. They were present in small numbers upon the grassy parts of the tundra throughout the summer. At Mint River, where there was an abundance of willows and long grass, they were common. I found a nest containing three small young on July 8. It was located by flushing the parent bird, and was made of fine dried grass tucked near the roots of a wind-blown clump. Although a good many of these sparrows were seen daily, no other nests were found.

GAMBEL SPARROW. *Zonotrichia leucophrys gambeli*.

These birds were noted at Nome, and a small series was taken there among the alders and willows between June 20 and 23. At Wainwright, in 1922, Hendee secured two specimens on May 29.

GOLDEN-CROWNED SPARROW. *Zonotrichia coronata*.

The only records for this species were made at Nome, June 20, when several of the birds were seen upon the tundra, and at Golovin Bay the following fall, where Hendee collected one on September 2.

WESTERN TREE SPARROW. *Spizella monticola ochracea*.

The first of this species was observed at Wales on May 27, 1922, and after that date a few were seen upon the tundra and in the willows along Mint River. They were not common at Wales.

SLATE-COLORED JUNCO. *Junco hyemalis hyemalis*.

A male, the only record for 1921, was taken at Wainwright September 16. In the spring a few of this species were observed in migration at Wales, the first making its appearance on May 18. Others were seen about the village every day for the rest of the month, after which time none was seen.

ALEUTIAN SONG SPARROW. *Melospiza melodia sanaka*.

Hendee reports these birds as fairly common at Dutch Harbor, around the docks and abandoned houses, on September 24.

FOX SPARROW. *Passerella iliaca iliaca*.

Fox sparrows were abundant in the vicinity of Nome, young birds being on the wing June 20, while other birds were just laying. A nest with four eggs was taken at Nome, and a few birds were observed at Cape Blossom, August 1. At Wainwright on September 30 a female was collected.

BARN SWALLOW. *Hirundo rustica erythrogastra*.

We found a pair nesting under the porch of one of the houses near the barracks at St. Michael on July 20, 1921.

TREE SWALLOW. *Iridoprocne bicolor*.

A few of these birds were noted at St. Michael between July 20 and 23. They were seen entering the crannies of the old buildings where they were probably nesting.

BANK SWALLOW. *Riparia riparia*.

On August 10 Hendee saw a flock of seven at Wainwright, probably stragglers from the rivers to the south. When inland during the winter he watched for nesting holes but did not find any. The natives did not know the birds.

NORTHERN SHRIKE. *Lanius borealis invictus*.

Hendee saw one of this species at Golovin Bay September 2, 1922.

ALASKA YELLOW WARBLER. *Dendroica aestiva rubiginosa*.

Hendee saw one of this species at Wainwright August 17, 1921, and a native brought us a specimen from Icy Cape, which he took on the snow-covered tundra October 8. It was extremely emaciated, although in fine plumage.

SWINHOLE WAGTAIL. *Motacilla alba ocularis*.

This species was observed only at Emma Harbor and Providence Bay during 1921; a few specimens were collected. A nest was found July 5 with five badly incubated eggs, in a little crevice in a crumbling rock cliff facing Providence Bay, about twenty feet from the ground. The nest was of grasses, plastered together with mud and lined with a few feathers, as in a robin's nest. It was fastened rather firmly into the nesting cranny. Unfortunately, I fell with the nest, breaking the eggs. The parent birds hovered overhead all the time I was attempting to climb the rotten walls, one of them having flushed from the nest when I first discovered it.

Only one specimen was seen on the Alaska side and that at Wales on June 23. While travelling down the coast by dog sled I found a mud nest in an abandoned igloo. The native with me told me it was the nest of a little bird "all same snow-bird, little longer". It was similar to the nest which I found in the cliff along Providence Bay, but I was unable to carry it with me for possible identification.

ALASKA YELLOW WAGTAIL. *Budytes flavus alascensis*.

This species is abundant in the vicinity of Nome and St. Michael where we observed a good many although we were unable to locate any nests. At the latter place we saw a number along the beaches, and young birds already on the wing were seen July 20. One that I caught was so covered with oil that it could not fly.

In the spring of 1922 a few were seen along Lopp Lagoon, where, on June 11, they were nesting upon the only spot free from snow. A Mongolian Plover was close to them. A south wind had been blowing for a few days, but had shifted to the north the night before, giving the Old World forms a chance to drift across the strait.

Only a few wagtails were seen around Wales, but they were common along Mint River and at other localities wherever there were willows. I found a nest in the

foundation of an old igloo on July 7, the anxious parents revealing its position. Four newly hatched young were the cause of the old birds' distress.

PIBIT. *Anthus spinoletta rubescens*.

But one of this species was noted during the summer, at Nome June 19. Hendee collected a specimen at Wainwright on September 28.

ALASKA WREN. *Nannus troglodytes alascensis*.

Hendee observed two wrens, presumably of this species, at Dutch Harbor on September 24, 1922. They were in a clump of spruce back from the beach.

KENNICOTT WILLOW WARBLER. *Phylloscopus borealis borealis*.

A dead bird was picked up at Icy Cape about June 20, 1922, and taken to Hendee. He noted the species commonly in the alder shrubs at Golovin Bay on August 31, 1922.

RUBY-CROWNED KINGLET. *Regulus calendula calendula*.

A single specimen was taken during the fall, a male which a native collected at Cape Halkett and brought to Mr. Brower. He kindly sent it to us with the following data: "The kinglet was collected at Cape Halkett by Sam late in September after the snow was on the ground. It was alive when he caught it, but it soon died of cold and hunger. I have never seen one on the coast before, but the natives tell me they are fairly common inland in the summer where they breed among the willows."

GRAY-CHEEKED THRUSH. *Hylocichla minima aliciae*.

These birds were seen only at Nome in 1921 and not abundantly although a few were observed daily working about the little brush-bordered streams. They were rather common at Wales in the spring of 1922 between June 9 and 11, on which dates they were moving northward on their spring migration. They seemed to prefer the boulder-strewn parts of the high tundra and were quite wild. The five specimens I collected proved to be males. None was seen after June 11.

WESTERN ROBIN. *Turdus migratorius propinquus*.

We recorded these birds only in the vicinity of Nome, where they were fairly abundant, especially around town. We found a set of four fresh eggs on June 21, the nest being placed in a pile of driftwood back from the beach.

RED-SPOTTED BLUE-THROAT. *Cyanosylvia suecica robusta*.

These beautiful little Siberian birds were met with on June 10 and 11, on which dates they were fairly common on the higher benches of Wales Mountain. I collected a pair for identification only, as I was in hopes they would nest in that vicinity; but none was noted after June 11. I have no doubt, however, that they nest in favorable localities to the north of Cape Prince of Wales.

WHEATEAR. *Oenanthe oenanthe oenanthe*.

This species was observed only at Wainwright in 1921, Hendee collecting two of three noted there August 17, and I collected a male of three seen upon the tundra August 21. None was observed after that date, and only one was noted in the spring of 1922, on June 2. At Cape Prince of Wales they were seen on several occasions in the early spring and I collected one on May 23. A few were noted on June 7, and again on June 10, specimens being collected on both dates. They may nest in the vicinity, but I did not see a bird during the summer months. A female taken on June 10 had the ovaries well developed.

Denver, Colorado, September 8, 1925.

FROM FIELD AND STUDY

A California Pigmy Owl Bathes.—A most interesting exhibition of a California Pigmy Owl bathing took place at Altadena, Los Angeles County, California, on the morning of November 16, 1925, under conditions that seem worth recording.

The afternoon of Saturday, November 14, had been set for the biennial meeting in Southern California of the Board of Governors of the Cooper Ornithological Club. Several members had gone from the San Francisco Bay region to attend the meeting and to pass a day or two among our very hospitable friends of the south country. On Sunday night three of us, Joseph Grinnell, Tracy I. Storer and myself, enjoyed the genial hospitality of Mr. and Mrs. J. Eugene Law at their charming place in the outskirts of Altadena. This home has been made a very attractive spot for humans to foregather in, and it has also been made equally alluring to a large number of avian guests, most of which carry around a gift from Mr. Law's hands, in the form of a numbered anklet, as a constant memento of their first visit.

On Monday morning, November 16, Mrs. Law was astir betimes, and the rest of us were in various stages of arising, when Storer and I heard her call out to her husband that there was a pigmy owl at a drinking fountain by the living room window. We made a dash for the living room and found Messrs. Law and Grinnell gazing on the scene with rapt attention.

A few feet below us and some ten feet away was the bath—a shallow Indian mortar—beneath a bush. The pigmy owl (*Glaucidium gnoma*, subspecies *californicum* in all probability) was thoroughly enjoying itself, unconscious of the group of fascinated watchers. The owl was wading about in the water, which was not over an inch and a half deep, sometimes ducking its head and then shaking off the water that rolled down its back, then again dipping forward so as to bathe its abdomen and breast. At times it would slowly turn around, seemingly not quite decided just what to do next, or it would stand still for a few seconds and then switch its tail sideways in the water with a remarkably quick action. Once it stood still with its back toward us for some little time, now turning its head on one side until looking directly backwards, then snapping its head around anteriorly to the other side until the posterior limit of action was reached, all with such rapidity that our eyes could scarcely follow the movement. During this time, some five or six minutes, the owl kept its feathers so fluffed out as to make it appear to be much larger than it actually was.

Meanwhile, in timid wonder, there was gathered around the bather another group of spectators—Valley Quail, Anna Hummingbirds, Gambel Sparrows, Golden-crowned Sparrows, Spurred Towhees, Anthony Brown Towhees, Audubon Warblers, Pallid Wren-tits and possibly other birds, all in characteristic attitudes watching the proceedings with suppressed excitement, with the hummingbirds poised on wing in front of the bath.

Finally, apparently deciding that it had done its duty in the ablutionary line, the little owl flew up to a bare branch three or four feet above the water and perched there, wagging its tail from side to side, possibly to shake off any remaining water. In about half a minute it flew into the upper part of a large oak tree near by, where it remained for some minutes before finally flying over and pitching down the edge of the bluff behind the house, followed by some twenty of the avian observers of its recent bathing activities.

Connected with this happening were some rather singular coincidences. One was that this was the first observed appearance on the place of this species of owl. Mr. Law had noticed occasional disturbances among the bird population there, accompanied by notes of a remonstrative nature, which he could not at the time account for. He now entertains the belief that these disturbances were caused by the presence, unknown to him, of this individual owl that so nonchalantly made itself at home on his premises that Monday morning. Another coincidence was the fact that the only previous record in *The Condor* touching upon the bathing of a pygmy owl (Mailliard, *Condor*, XXIV, 1922, p. 31) was published by one of the party present on this occasion. If there are any other published records of similar performances by members of this genus they must be few and far between, for it is a performance probably rarely seen by human observers.—JOSEPH MAILLIARD, *California Academy of Sciences, San Francisco, March 29, 1926.*

The Gray Gyrfalcon in Washington.—Gyrfalcons (*Falco rusticolus*) are so rare in the United States that, as Dr. Fisher has said, a man may consider himself fortunate if he sees one in a lifetime. It gives me pleasure, therefore, to record a specimen taken near Spokane about October 15, 1925, by Mr. R. L. Peel of Deer Park, Washington, which is now in my possession and which constitutes the second state record. According to Mr. Allan Brooks, gyrfalcons are rare but of regular occurrence along the boundary line of Washington and British Columbia, and likely, therefore, to be found south of it. He has four skins in his collection, and states that there are a number of records for Alberta and a few for eastern British Columbia. Professor Wm. Rowan, of the University of Alberta, Edmonton, writes me that he knows of at least seven gyrfalcons from that province, the skins being scattered in various Canadian and American collections. There are only two records for Montana, one of them a sight record. The trouble is that, although hawks and owls are generally knocked down by hunters and the best looking ones mounted, there are so few bird students in the regions mentioned that the records never get into print.

The first for Washington was a bird discovered in a taxidermist's shop in Spokane, about December 18, 1896, by the late Dr. J. C. Merrill, U. S. A., then stationed at Fort Sherman, Idaho. According to Withers Brothers, taxidermists here, this was a light colored bird and purchased by Dr. Merrill for a friend in Massachusetts. It is now in the Museum of Comparative Zoology, Cambridge. My bird, a dark colored immature which has been examined by H. S. Swarth at Berkeley, California, may be described as follows: Length 24 inches, wing 16, tail 9.50, bill 1.50, and tarsus 2.50. Plumage above slate-colored, excepting a few white feathers on head, and tip of tail white. Below heavily spotted with reddish-brown. Tarsus with large tufts of feathers on the side. Sex undetermined.

Conditions here which might account for the appearance of this bird are interesting. The whole northwest, from Washington to Alaska, is having one of the mildest winters on record. The ice on the Peace River went out in December. Eastern Washington did not have the usual fall migration of northern ducks. Canada in general is just entering on the down phase of its ten-year animal cycle, so that food for Raptores may be getting scarce. Washington State has had an invasion of goshawks and rough-legs this winter, as well as quite a few Snowy Owls and Hawk Owls, the first in three years. Besides the gyrfalcon, a Great Gray Owl was brought in, as well as a Ferruginous Rough-leg, on January 22, both rare here, there being no state record for the latter bird after July. The rolling hills and vast treeless plains of eastern Washington, with their numerous jack-rabbits, may be the attraction.—J. L. SLOANAKER, Spokane, Washington, February 1, 1926.

Blue-fronted Jays in Altadena.—It has been suggested to me that some remarks on the appearance of the Blue-fronted Jay (*Cyanocitta stelleri frontalis*) in Altadena might be of interest to CONDOR readers. I have lived in Altadena for over forty years and as far as I can remember these jays were seen on this ranch only twice before the year 1900. On those two occasions they did not stay more than a month or two at each visit. I cannot recall any particular visit of these jays between 1900 and 1920, and if seen at all it was rarely. From the fall of 1921 to November, 1923, they were frequently seen at all seasons, generally around the house and barns.

In 1922 and 1923 the Blue-fronted Jays nested in eucalyptus trees and raised, to my knowledge, one brood each year, very likely more, as there were certainly several pairs about during the nesting season. None of these jays was seen here between November, 1923, and November, 1925. From November, 1925, to this date, February, 1926, they have been seen almost daily and I have taken three in my traps. The elevation here is about 1050 feet above sea level, and that part of the ranch where the jays have been commonly seen, about three-quarters of a mile from the base of the mountain at Mount Wilson Toll House, is fairly well covered with large eucalyptus, oak and citrus trees.—WALTER I. ALLEN, Lamanda Park, California, February 27, 1926.

The Food of a White-tailed Kite.—There came into my hands recently a specimen in the flesh of the White-tailed Kite (*Elanus leucurus*). To say that all parts of this now threatened species were of great interest would be a mere platitude, and equally superfluous would be the statement that all preservable parts of the specimen were retained. One of the surprising things about this really small bird (a male) was the

tremendous amount of food in its stomach and crop. Dr. Fisher (U. S. Dept. Agric., Div. Orn. and Mamm., Bull. no. 3, 1893, p. 23) records a solitary meadow mouse in the one stomach of the species examined by him and quotes Audubon to the effect that its food is made up of reptiles, frogs and insects. My own impression had always been of the kite as a rather effeminate bird. My interest, therefore, merged into surprise on discovering that both its appetite and its table manners are far from dainty. Remains of four meadow mice (*Microtus*) and an entire shrew (*Sorex ornatus*) were identified in the contents of stomach and crop. The shrew was absolutely entire. The largest mouse had been torn apart in the lower thoracic region and the hinder portion bolted entire with skin and fur in place. Two mouse heads had been swallowed hair and all. The fore quarters of the mice seemed to have been stripped of skin, but great masses of skin and fur had been swallowed after stripping them off. Viscera and small bones indicated that most of both mice had been eaten, and there is no reason to believe that any part had been discarded. Well cleaned bones from two other *Microtus* skulls were still retained in the stomach. Neither insects nor lower vertebrates were present. I have seen the Prairie Falcon feed with the most fastidious care, leaving even the ribs intact but picked clean. This kite, however, seems to bolt its food with almost owl-like ruthlessness.

Synopsis of food items in stomach of *Elanus leucurus*: 1 shrew (*Sorex ornatus*), entire; 2 complete heads of *Microtus* with hair on, unbroken; 2 well digested *Microtus* jaws plus one skull; 1 entire hind quarters including lumbar and some thoracic vertebrae and tail, all with hair on; 4 front legs (skinned) including scapulae; sections of spinal column with ribs, great masses of skin with long hair, and visceral parts, miscellaneous. Estimated volume, 130 cubic centimeters.—LOYE MILLER, Los Angeles, California, March 9, 1926.

Late Nesting of Cedar Waxwing.—While looking over my hunting grounds, on August 23, 1924, I was surprised to come upon a Cedar Waxwing (*Bombycilla cedrorum*) sitting on two incubated and two infertile eggs. The nest was seven feet up in a myrtle tree. It was composed of coarse grass and weeds and was lined with fine dry grass and hair that hung in a slovenly manner over the edge of the nest. A few dry leaves had apparently fallen into the nest.

The eggs were bluish-gray, marked with spots of sepia and dark purple. A further search disclosed two more nests, both with young. All three were in myrtle trees within the limits of this city.—J. THOMAS FRASER, Eureka, California, February 15, 1926.

The Voice of the Old-squaw.—The call of the Old-squaw (*Clangula hyemalis*) has probably been rendered by observers in more different ways than that of any other duck, and with a little help from the imagination, all of them are more or less recognizable by anyone who has heard the call. It is a difficult matter to reproduce sounds of most bird voices on paper. However, in my opinion the voice of the Old-squaw does not belong in the difficult class. It is one of the few that can be set down almost exactly in writing. It has been my experience that in order to get a correct idea of many bird notes it is necessary for the observer to be quite close to the bird. I believe most of the written renderings of the call of the Old-squaw have been obtained by observers who heard the call from a considerable distance; otherwise there could not be such a variety of renderings.

The Old-squaw is a regular spring migrant here and for a period of about ten days in the first half of May the musical call of the birds can be heard from far out on the lake. On May 11, 1920, the ice on Lac La Nonne shifted about half a mile off-shore, an unusually late date for this occurrence. In the evening I paddled out in my canoe to observe the different waterfowl. There were numbers of Old-squaws sitting on the edge of the ice and swimming in the water beside it, and I had no difficulty in approaching to about thirty-five yards in several instances without alarming the birds. There was not a breath of wind and I had an excellent opportunity to listen to their call, which I had never heard previously, except from far out in the lake. The call was *unk-on-alik*, the second syllable pronounced like the French "on". *Unk-on-alik* is almost exactly the call as near as any bird call can be set down on paper. On becoming aware of my presence they also uttered a low conversational *uk, uk*, as they took to the water and swam away.—A. D. HENDERSON, Belvedere, Alberta, February 25, 1926.

Winter Notes from the Copper River, Alaska.*—During the month of December, 1919, I made a trip from Chitina, Alaska, to within a short distance of the headwaters of the Copper River. Territorial Warden Young and I left the little village with horse and sled on December 7, following the Fairbanks trail northward. The trail from Chitina to Tonsina winds along the rugged hills of the Copper, furnishing a beautiful view across the broad expanse of spruce-filled valley.

The first day's journey carried us over a splendid road, although a tangle of vines and cranberry bushes impeded our progress through the woods. Spruce trees covered the mountain slopes and faint wisps of smoke curled from the summit of Mount Wrangell. Bird life proved to be very scarce from the start, Redpolls, White-winged Crossbills and Alaskan Jays being the only forms seen during the day, while the red squirrels were the only mammals noted.

At the mouth of the Tonsina River, sixteen miles from Chitina, there is an Indian village, an unkempt collection of scattered cabins and elevated caches. A short distance away is the Tonsina roadhouse where we spent the night.

The next day we had perfect weather for the short run to Kenny Lake roadhouse. Unfortunately, lack of wild life notes is the most outstanding feature of our experiences, for I have rarely seen such a dearth of animal life in a wooded country. A single Arctic Three-toed Woodpecker, crossbills, redpolls and jays were the only birds, while occasional rabbit, squirrel and weasel tracks were the only evidences of mammal life.

The following day, hazy and with the thermometer twelve below zero, we made twenty-four miles to Copper Center. The usual scarcity of birds prevailed and on December 10 we travelled the thirty miles to Gulkana without seeing a single bird or mammal. It was a clear day, with the temperature twenty-four below, and as we were heavily loaded and walked most of the way, we had ample time to make observations.

We left the Fairbanks trail to Gulkana and mushed to the Gokona River, following the Copper River along the general line of the old Eagle mail route. We were out the entire day, the spruce trees were covered with cones, but not a single bird was seen on the trip. We found the Indians a rather wretched lot, for they were having poor success in their hunting and trapping. They reported "halo (no) caribou", upon which they depended so much for food and clothing. Had it not been for an unusual run of salmon the summer before, they would have been starving.

December 12 we had an early start from Gokona, intending to mush the thirty-six miles to Chistochina, but when climbing the steep grade from the Gokona flats to the high land, I could not hold the sled to the trail and we went over, breaking the sled. We camped that night, repairing the runners with the aid of our ax and some wire, and made the roadhouse next day. The Tolsona flats furnish about as monotonous a day's travel as one could experience. We saw no birds, the trees were stunted and burned over, and the wide stretches of marsh-land were filled with frozen nigger-heads. We saw a few ptarmigan tracks, as well as the tracks of a moose and a lynx. Although the trail was monotonous there was some comfort in the beauty of the frost-covered spruces and, late in the evening, the sky became a crimson flame, lighting the mountains, Drum and Sanford, whose great glaciers showed green, even at that distance.

We rested over at John Paulson's trading post the 14th and made arrangements for him to accompany us up the river with his dog team, while an Indian was to care for our horse during our absence. The temperature was thirty-five below and the next day we remained housed, as the thermometer dropped to fifty-six below and Paulson did not care about driving dogs in such cold weather.

We started out at nine the following morning, bucking a head wind which swept down the river, and found that the cold weather had been favorable for us, in that it had frozen most of the overflows. The going was hard, as we had to face into the biting wind; and it was all our five dogs could do to keep a footing on the slippery, wind-swept ice. We boiled tea at noon, and made a cabin on the Salina River, thirty miles from the post, by dark. No birds or mammals were seen. From the cabin on the Salina we took a side trail to Batzunita Creek, ten miles farther, to the Indian village where we stopped with Batzunita Billy, one of the natives. Trapping was so poor the natives were not even attempting it and few caribou were rewarding the hunters.

* The above notes were made while doing field work for the Biological Survey and are published here with the permission of Dr. E. W. Nelson, the Chief of the Bureau.

Having secured the notes on fox ranching and other data which we desired, I decided to push back to Chitina as rapidly as possible. We left Chistochina December 20, and mushed the thirty-six miles to Gokona. The woods were beautiful with new-fallen snow, there was not a sound to be heard and not a bird was seen. In fact, in the last two days we had covered sixty-six miles on foot, without having seen a bird or mammal. Our return to Chitina was of no especial interest, as we followed the Fairbanks trail back from Gulkana.

The ornithological notes of our trip are chiefly important because of the lack of species and individuals noted. We covered about 160 miles of trail each way, mostly on foot, and kept a careful watch at all times for birds. Ptarmigan and grouse tracks were seen occasionally, but the birds were so scarce that the natives did not hunt them. When talking to men along the trail, the sight of a ptarmigan or grouse a month previously was thought of enough interest to tell.

The following notes were made between December 7 and 27, 1919, in the Copper River Valley.

Alaska Three-toed Woodpecker. *Picoides americanus fasciatus*. Woodpeckers were rare, especially when it is remembered that the entire trip was made through a wooded region. The fact that a great part of the flats was burned over might be one cause for their scarcity. Only three woodpeckers were seen and one of these collected. The specimen secured was an adult male taken December 24 at Kenny Lake. It was in a burned-over tract of cottonwood.

American Magpie. *Pica pica hudsonia*. Restricted to the vicinity of the villages; quite common at Chitina. One was seen at Tonsina, and two at the Batzunita Indian village, at the end of our outbound journey. I collected an adult female at Tonsina December 25 which had half of the upper mandible missing.

Alaska Jay. *Perisoreus canadensis fumifrons*. The commonest birds noted. They frequent the whole region visited and are usually to be found about the trading posts, where they secure an easy living.

Northern Raven. *Corvus corax principalis*. Only two seen on the trip, one the first day out as it sailed high over the mountains, circling buzzard-like among the clouds, the other at Gulkana. This one followed us for miles and when we thought we had lost it we would suddenly hear the raucous croak and he would then sail ahead and alight.

Alaska Pine Grosbeak. *Pinicola enucleator alascensis*. Very scarce, five specimens only being seen and all of them between Tonsina and Chitina. An adult female was collected December 26 near Chitina.

White-winged Crossbill. *Loxia leucoptera*. Abundant throughout the wooded portion of the first eighty miles. Not seen in the very favorable places around the Chistochina and the Salina rivers. The birds fed in large flocks; they were wild, and as they remained in the highest trees they were difficult to collect.

Hoary Redpoll. *Acanthis hornemanni exilipes*. Common Redpoll. *Acanthis linaria linaria*. Redpolls were abundant for the first fifteen miles from Chitina, being seen on both the out and the return trip. A flock of fifty or more was seen at Chistochina on December 14. Both species occurred in the same flock, although the Hoary Redpoll was in the minority. They were very wild, flying away at the slightest noise; but if I remained stationary, they would approach within a few feet so that I could determine the species. Specimens of both species were collected.—ALFRED M. BAILEY, Colorado Museum of Natural History, Denver, Colorado, November 17, 1924.

American Egrets near Benicia.—On November 16, 1925, while driving between Benicia and Cordelia, California, along the paved highway skirting the Suisun marshes, I observed twelve American Egrets (*Casmerodias egretta*) standing in shallow water some fifty yards from the highway. These large white birds, approaching the size of the Great Blue Heron, were a beautiful sight and identification was unquestionable. Since that date and until the present writing I have seen individual birds at different points in the marsh, but this is my first observation of as many as a dozen together.—EMERSON A. STONER, Benicia, California, February 14, 1926.

Least Flycatcher in Kansas in Summer.—On July 28, 1921, I collected a Least Flycatcher (*Empidonax minimus*) in a ten-acre grove of trees on the Mendenhall ranch which is five and one-half miles southeast of Gove, Gove County, Kansas. The skin,

which is now in the collection of the University of Kansas Museum, was identified by Dr. A. Wetmore. Several other individuals of this species, which has been recorded as a transient in all the published lists of the birds of the state, were seen between July 28 and August 2 in the grove in which this specimen was taken. The presence of this species at this location and at this time of year indicates that the Least Flycatcher may be found nesting in western Kansas.—JEAN LINSDALE, Berkeley, California, April 28, 1926.

Moving the Nest of the Killdeer.—Killdeer (*Oxyechus vociferus*) are quite common on our ranch near Buena Park, California, and have been the basis of some very interesting observations. The birds seem to know that every possible means will be used to protect their nests during the breeding season.

On June 19, 1925, a nest with four fresh eggs was found in the orange grove while the latter was being ridged preparatory to irrigation. It was, therefore, necessary to move the nest or see it destroyed. A mound of earth a foot high was scooped up by hand, a hollow made on the top, the pebbles and sticks of the original nest were placed in the hollow and then the eggs were lifted and placed in the new location in the same position as in the old nest. The parent hovered near during the time the nest was being changed, going through all the broken-wing performances it could invent. Immediately upon my withdrawal the bird returned to the eggs, investigated, and seemed satisfied.

On the following day the grove was irrigated. The parent sat on the nest, except when disturbed. On June 26, when the grove was cultivated, the bird was still sitting upon the mound and continued to do so until July 1, when it made a new nest at the foot of the mound and trailed the eggs down the side into the new nest. The trail was one-quarter inch deep and on an easy slope. On July 19, three of the eggs were hatched and we were able to capture one of the young and give it band no. 330661.

This is the third year that we have successfully moved a nest of this species. Late in May, 1924, a nest was moved six feet to the foot of a young orange tree. These eggs were slightly incubated. The nest was placed upon an eight inch elevation in its new location and all four eggs were hatched.

While plowing a field early in June, 1923, a nest of four eggs was found directly in the path of the plow. With the aid of a shovel the nest was moved out of the way each time the plow came around, thus allowing the parent to return between times and see that all was well. In this way the nest was finally moved to the foot of a young tree ten feet away. In this case, also, the parent continued to sit upon the eggs until they hatched.

From these observations it would seem that the Killdeer is not easily disturbed when nesting.—JAMES A. CALDER, Buena Park, California, October 30, 1925.

A New Race of Acorn-storing Woodpecker, from Lower California.—The collections of birds accumulating in the Museum of Vertebrate Zoology from the San Pedro Martir "section" of the Lower California peninsula are bringing to light quite a number of undescribed and satisfactorily distinguishable subspecies. It is now in order to diagnose a well-marked new member of the series of Acorn-storing Woodpeckers (Genus *Balanosphyra*). This we do, as follows:

Balanosphyra formicivora martirensis, new subspecies

San Pedro Martir Acorn-storing Woodpecker

Type.—Female; no. 46252, Mus. Vert. Zool.; La Jolla ("La Joya"), 6200 feet altitude, Sierra San Pedro Martir, Lower California, Mexico; October 16, 1925; collected by Chester C. Lamb; original no. 5066.

Distinguishing characters.—Most nearly like *B. f. bairdi*. Distinguished from that subspecies primarily by shorter wing, and by slightly shorter and notably weaker, more slender bill; also by average differences in head markings as set forth below and in fig. 50.

MEASUREMENTS IN MILLIMETERS (AVERAGE, MINIMUM, MAXIMUM)

<i>Balanosphyra formicivora bairdi</i>			
	Wing	Tail	Culmen
10 males from west-central California.....	142.0 (133.0-148.0)	78.7 (70.5-85.0)	28.7 (27.0-30.5)
<i>Balanosphyra formicivora martirensis</i>			
5 males	138.2 (132.0-144.0)	78.5 (72.0-82.0)	27.8 (25.5-29.0)
5 females	141.1 (135.0-145.0)	81.6 (78.0-84.0)	26.8 (25.0-28.0)

Range.—So far as now known, only parts of the Sierra San Pedro Martir, in northern Lower California, between latitudes 30° and 31°30'; altitude 5800 to 7200 feet; life-zone mainly Upper Sonoran (live-oak association), but also Transition locally or sporadically. Specimens examined, 10, from the following two localities, both on the western slope of the Sierra San Pedro Martir: La Jolla ("La Joya"), 6200 feet; Concepcion, 6000 feet. All collected by Chester C. Lamb.

Remarks.—The relatively feeble bill of this bird, as compared with that of the upper Californian *bairdi*, is the most conspicuous character of this subspecies. In bill structure it is closely similar to *B. f. aculeata*, of Arizona.

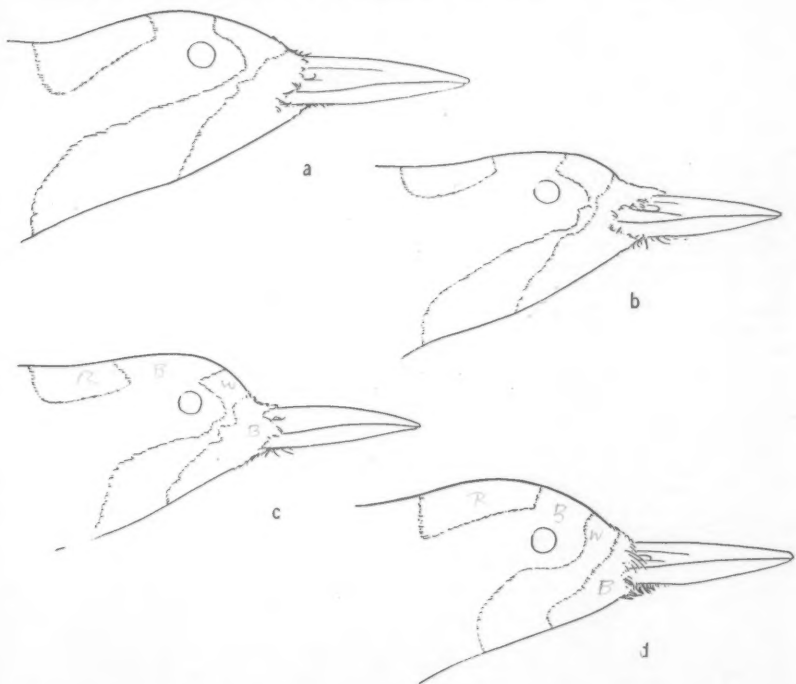


Fig. 48. SHOWING SIZE OF BILL AND EXTENT OF COLOR AREAS ON HEAD IN THE FEMALE OF FOUR RACES OF *Balanospheya formicivora*. Natural size.

a, *B. f. bairdi*, no. 23536, Mus. Vert. Zool.; Guerneville, Sonoma County, California; August 31, 1913.

b, *B. f. aculeata*, no. 27713, Mus. Vert. Zool.; Sierra Ancha, Gila County, Arizona; June 24, 1917.

c, *B. f. martirensis*, no. 46252, Mus. Vert. Zool.; Sierra San Pedro Martir, Lower California; October 16, 1925.

d, *B. f. angustifrons*, no. 37366, coll. Louis B. Bishop; Sierra de la Laguna, Lower California; August 30, 1924.

The character of the head markings in the female is suggestive again of *aculeata*, the red area being usually more nearly square, as in that form, rather than shorter than wide, as in *bairdi*. The white frontal band averages slightly narrower than in *bairdi*, an approach toward the condition in *angustifrons*, of the Cape San Lucas region. The yellowish white (more dilutely yellow than in *bairdi*) U-mark on the lower throat in both sexes averages very much narrower in our specimens of *martirensis* than in a large series of *bairdi*—usually only about half the width in the former as in the latter. This we are not quite confident of as a real character, in that there is a chance that "make" of specimen (whether or not the skin of the throat was stretched) affects

the width of the white band. It occurred to us that counting the white feathers in a median line would prove the point; but this proved difficult and inconclusive in the dry and distorted skin.

In character of the markings on the feathers of the breast there is no departure from the condition in *bairdi*. The upper breast is broadly and solidly black, the black band not penetrated posteriorly with white streaks to such an extent as in *aculeata* and *angustifrons*.

The group of woodpeckers here dealt with, in so far as the province of the old A. O. U. Check-list is concerned, would now seem to stand as follows:

1. *Balanosphyra formicivora bairdi* (Ridgway). California Acorn-storing Woodpecker.
2. *Balanosphyra formicivora martirensis* Grinnell and Swarth. San Pedro Martin Acorn-storing Woodpecker.
3. *Balanosphyra formicivora angustifrons* (Baird). Narrow-fronted Acorn-storing Woodpecker.
4. *Balanosphyra formicivora aculeata* (Mearns). Mearns Acorn-storing Woodpecker.

—J. GRINNELL and H. S. SWARTH, *Museum of Vertebrate Zoology, University of California, Berkeley, March 13, 1926.*

Occurrence of Sabine Gull at Playa del Rey.—On April 22, 1926, arriving about noon at Playa del Rey with Mrs. Bates and Miss Craig, I found the tide low and extensive mud flats exposed. Few birds were then about the lagoon, but in a very short time we saw a small gull, its black feet extended in the act of descending to alight on the margin of a flat directly opposite us. Its head was apparently black, and its outspread wings were extensively black. It was recognized at sight as a Sabine Gull (*Xema sabini*). Five and six power binoculars were instantly turned upon it, and practically all field identification marks observed, though the plumbeous tone of the head and the black collar could not be distinguished at the distance the bird was from us. The yellow tip of the black bill was seen, and the slaty tone of the gray mantle was noted. The bird walked along the margin of the water, giving us a view of the folded wing, showing the white tips of the black primaries. Presently it flew across the channel, revealing the white tail, shallowly forked, and again alighted at the water margin facing us.

We then noticed a slight yellowish stain on the white breast. It walked into the shallow water, then swam about, and presently began to bathe. This process was carried on most vigorously for several minutes, particular attention being paid to the lower parts, to which the bill was applied repeatedly. Rising from the water it alighted nearer us on a flat directly in front of our place on the dunes, where it proceeded to shake and preen its plumage, again and again endeavoring to clear off with its bill a small spot of heavy oil that we now saw on its underparts. Thus the yellow stain was conveyed to the white breast. It then flew down to the lower end of the lagoon where it alighted near a large flock of resting gulls. It had held our undivided attention for nearly half an hour, and we now left it for a time.

Somewhat later a careful search of the lower area, including the beach and the pier, failed to reveal its presence, and we concluded that it had probably resumed its migratory journey, and that to that hampering spot of oil, and its need to free itself of it, we owed our fortunate chance to see this beautiful and rare visitor to our shore. Glad we are that we were at the right place at the right time. Our thoughts follow him on his long journey with the hope that the menace of that clinging burden may yet be overcome.

Subsequently, on May 20, a Sabine Gull was seen standing on Hermosa Beach, in the vicinity of the pier. In this favorable situation we approached quite near it, where the slaty hood and the black collar, not distinguished in the individual previously seen, were definitely observed. This bird, like its predecessor, was suffering from oil, but it plainly was not the one seen April 22.—FRANCES B. SCHNEIDER, *Los Angeles, California, May 24, 1926.*

Juvenal House Wren Reveals Ancestral Trait not Apparent in Adults.—On June 3, 1923, five nestlings of the Western House Wren (*Troglodytes aedon parkmani*) were banded at Altadena, California. On June 19, these juvenals, just out of the nest and

accompanied by a parent, were discovered in nearby ground shrubbery. Here one of them, standing on a slanting rock and obviously concerned over my too close approach, bobbed its body in the same manner as do Canyon Wrens and Rock Wrens.

As this performance was repeated two more times while I was observing this youngster, the conclusion seems warranted that it was a manifestation of an inherited instinct or ancestral trait, which seems to become inoperative in mature birds of this species, while still surviving in the adults of *Catherpes* and *Salpinctes*. At any rate I have never noticed such a performance by adults of *Troglodytes*, although it seems probable that an occasional grown-up may retain a habit which most of them live down.

This trait may, of course, be rare among juvenals of this species, and they may be, only now, tardily beginning to manifest an inherent wren group tendency, already well developed in the two other groups before mentioned.—J. EUGENE LAW, *Altadena, California, March 25, 1926.*

The White-throated Swift in western Yolo County, California.—The White-throated Swift (*Aëronautus melanoleucus*) has been reported along the Sierra-Cascade range north to Mount Shasta (Merriam, N. Amer. Fauna, no. 16, 1899, p. 117) and in the inner coast ranges to Mount Diablo (Cohen, Condor, v, 1903, p. 119). Its presence in more northern portions of the inner coast ranges might therefore be expected, since these hills resemble, ecologically, the western foothills of the Sierra Nevada. On May 21 and 30, 1925, I saw and heard White-throated Swifts over Putah Cañon, on the Yolo-Solano County boundary, about five miles west of Winters; six birds were observed on the former date. The cañon wall at that point has basaltic outcrops which would afford suitable nesting places, while abundant forage is available in the air over the stream. Search for nesting locations has, however, thus far been unfruitful.—TRACY I. STORER, *Zoological Laboratory, University Farm, Davis, California, April 8, 1926.*

An Unsuspected Relationship.*—The Yellow-bellied Sapsucker (*Sphyrapicus varius varius*) does not get his living from grubs, borers and other insects, thus being a benefit to man, but from the green bark and sap of healthy, thrifty trees. Thus he has always been condemned as a pest that must be destroyed. He is not protected by game laws and is condemned to be shot. Father had us shooting them for injuring his fruit and other trees. I studied a long time before I found out why such a harmful creature was ever created.

Years ago the nurseryman and orchardist used to girdle their fruit trees to make them bear fruit. A tree too thrifty and growing fast bears sparingly; but by checking its growth, that is, stunting the trees without injuring them too much, by girdling them or cutting a ring of the bark around several branches, those branches set to forming fruit buds more than leaf buds. By being familiar with this method I traced up the benefits of the sapsucker. He girdles the fruit and seed bearing trees that a multitude of birds depend on for food at certain seasons and which build their nests near such trees to provide handy food for their young. So this busy little sapsucker is really providing for them all. Poor persecuted little blessing! That's what I now think of him.

Much of this lesson I learned by gathering seed. I learned long ago that it was not the fast growing and thrifty trees that bore the seed, but those stunted ones, or trees in which the growth had been checked in some way. By looking closer I found that most of them had a girdle of holes. Many species of birds depend on black cherry, mountain ash, choke-cherry, viburnum and other trees of berry bearing variety. By observing closely I noticed that all trees of the above mentioned kinds had some branches drilled or girdled, thus keeping some bearing wood at work each year. Anyone ought to see that it is a very serious matter to remove one link from nature's chain; and killing off the sapsucker would be serious.—CHARLES DOUGLAS, SR., *Waukegan, Ill., May 1, 1926.*

The Magpie Nesting in Kansas.—On May 28, 1925, I found a nest of the Magpie (*Pica pica hudsonia*) along the Arkansas River and two miles east of the Colorado-Kansas line in Hamilton County, Kansas. The nest was fifteen feet from the ground in a leaning willow which was growing at the edge of the flood-plain of the river. The

* Transmitted by Professor W. C. Allee, University of Chicago.

structure was eighteen inches in diameter and was two feet high, with a light screen of small sticks over the top. Some mud had been used in constructing the base. The lining was composed of fine sticks, rootlets, and horsehair. An adult, which was brooding two eggs, flew off the nest when the tree was approached; but it immediately returned to the tree and began calling.

Bunker in his "Birds of Kansas" (Kans. Univ. Sci. Bull., vol. 17, 1913, p. 150) gives the Magpie as a rare winter visitant in western Kansas. Goss gives the species as "formerly a resident; rare," in his "History of the Birds of Kansas". The authority for that statement is given in Goss' "Revised catalogue of the birds of Kansas" (1886, p. 35) where it is stated that this species was found nesting in Graham County, Kansas, in the summer of 1873 or 1874 by a Mr. Jeff Jordan. The birds were not seen after 1875.—JEAN LINSDALE, Berkeley, California, April 28, 1926.

A New Race of Say Phoebe, from Northern Lower California.—Specimens of the Say Phoebe arriving late last fall from the San Pedro Martir district of Lower California showed themselves at once to differ from anything previously contained in the Museum of Vertebrate Zoology. Comparisons have now been concluded with abundant material from Upper California, and also with an essential series of specimens from the Rocky Mountain region and Great Plains, loaned me from the National Museum through the willing aid of Doctors Wetmore and Richmond.

It is found that the birds from the east base of the Rocky Mountains, whence ("Arkansas River") *Muscicapa saya* Bonaparte was named, are just like the predominant type of Say Phoebe in California, Nevada, Arizona, and on the Mexican plateau. I concur with Swarth (Condor, xxviii, 1926, p. 45), as to the desirability of recognizing a northern race, *Sayornis sayus yukonensis* Bishop. Since the way seems to be clear as regards synonyms (see Ridgway, Birds N. and Mid. Amer., Part iv, 1907, pp. 603-604), it is in order to name a southern race which is apparently resident in Lower California.

Sayornis sayus quiescens. San José Say Phoebe.

Type locality.—San José, 2500 feet altitude, latitude close to 31°, about 45 miles northeast of San Quintin, Lower California, Mexico.

Type.—Male adult, in full fresh annual plumage; no. 46260, Mus. Vert. Zool.; September 27, 1925; collected by J. Grinnell, orig. no. 6341.

Diagnosis.—In general characters similar to *Sayornis sayus sayus*, but tone of coloration paler, this paleness being in the direction of ashy gray rather than light brown.

Range.—So far as now known, only an area in northwestern Lower California on the Pacific drainage from the Sierra San Pedro Martir west to the sea-coast. Life-zone chiefly Upper Sonoran. Specimens examined, 7, from the following localities: San José; San Telmo; Santo Domingo; Arroyo Nuevo York. All these localities lie between latitudes 30° 30' and 31° 30'.

Remarks.—No specimen of Say Phoebe out of 63 comparable skins from California duplicates in tone of color any of the six fall and winter skins at hand from the "San Quintin district" of Lower California. The pervading ashiness of these latter specimens contrasts with the brownish tones of *sayus*, most especially on the whole dorsum; the head of *quiescens* above the malar level is distinctly slaty; the outer surface of closed wing is varyingly "pale smoke gray" (of Ridgway, 1912) on the feather-edgings, to "light grayish olive" on the central portions of the coverts, while the more or less concealed darker portions of the secondaries are slaty rather than dark brown.

Wear and fading bring extreme "scorching" of coloration in Say Phoebes, especially in those from the Colorado and Mohave deserts; but this adventitious type of pallor involves a tint of tan, not the ashy tint characteristic of *quiescens* in unworn, unfaded condition. These two types of "paleness" must be distinguished, of course. In this connection, I find the following statement by Dr. L. B. Bishop (Auk, xvii, 1916, p. 116) accompanying his description of *yukonensis*: "Specimens of *saya* from Lower California and Arizona are the palest . . .".

With regard to dimensions, I am unable to see any outstanding character correlated with any portion of the general range of the Say Phoebe. None of the Lower California specimens, however, has quite as long a wing as some of the Rocky Mountain specimens of *sayus* and as most of the examples at hand of *yukonensis*. Without taking actual measurements, I judge whatever difference as does obtain in averages would be small, negligible as regards practical taxonomic value.

For want of material, I am ignorant of the status of the Say Phoebe elsewhere on the peninsula of Lower California than in the San Quintin district. Here the species unquestionably breeds; for Anthony (Zoe, iv, 1893, pp. 237-238) says of it: "Quite common along the base of the [San Pedro Martir] mountain and in all of the coast valleys below 4000 feet. At Valladares they were given to nesting in all of the deserted mines, and I have found their nests twenty feet below the surface of the ground in an old shaft or tunnel." Also there are records of breeding elsewhere north of latitude 28°. But in the Cape San Lucas district the species apparently occurs only as a winter visitant, and only sparsely at that. The subspecific status of the few specimens recorded as taken there remains to be determined.

The races of Say Phoebe I now consider recognizable are as follows, listed from north to south.

1. *Sayornis sayus yukonensis* Bishop. Northern Say Phoebe.
2. *Sayornis sayus sayus* (Bonaparte). Rocky Mountain Say Phoebe.
3. *Sayornis sayus quiescens* Grinnell. San José Say Phoebe.

—J. GRINNELL, *Museum of Vertebrate Zoology, University of California, Berkeley, May 28, 1926.*

The Brewer Sparrow in the Oklahoma Panhandle.—Many bird students have long contended that Brewer Sparrows (*Spizella breweri*) were likely to occur as spring and fall migrants in Cimarron County, the extreme western county of the Oklahoma Panhandle. They had been reported from Baca County, Colorado, by E. R. Warren in 1906, having been observed by him on April 29, 1905, at Monon and at Springfield, forty miles north of the Oklahoma-Colorado line; and a few years later they had been found in Colfax County, New Mexico, sixty miles west of the Oklahoma-New Mexico line. Then, in their "Birds of Oklahoma", published in May, 1924, by the University of Oklahoma, Margaret Morse Nice and Leonard Blaine Nice placed this bird in a list headed "Birds Whose Occurrence Is To Be Expected", and stated that it should be a transient through Cimarron County. However, despite all of the foregoing facts and opinions, actual record of its occurrence here was lacking until within comparatively recent months.

During the past fifteen or sixteen years the writer had kept a close watch, each spring and fall, for this sparrow, but always without result until last October (1925), when on the morning of the 11th it was my good fortune to find fourteen of the birds near the little inland town of Kenton, located in the valley of the Cimarron River. I was not equipped at the time for taking a specimen, but I studied the birds carefully and made note of their color, size and other distinguishing characteristics, which together with my previous knowledge of the species, gained through observations in Colorado and New Mexico, left no shadow of doubt in my mind as to their identity.

Though satisfied, personally, with my findings in the matter, I very much desired (since my record would, so far as I could learn, be the first for the state) to secure still further proof of their correctness, before making a report. In this I was again fortunate, as on March 20, 1926, I encountered twenty-two of the birds on a three-acre tract of land just south of Kenton, and at this time secured a specimen that made positive the identification of the species as the Brewer Sparrow, sometimes known as the "sage-brush chippie". Thus a new name has been added to the already extensive list of Oklahoma migrants, and the writer takes keen pleasure in reporting the event, not only for this reason but because it also vindicates an opinion held by himself and his associates during a long period of years, and proves again that patience and perseverance in bird study bring their reward the same as in any other line of enquiry.—R. C. TATE, *Kenton, Cimarron County, Oklahoma, April 2, 1926.*

Philadelphia Vireo in Kansas.—On September 2 and 24, 1922, I collected specimens of the Philadelphia Vireo (*Vireosylva philadelphia*) from flocks of other transient vireos and warblers in a mixed growth of willows and young cottonwoods on bottomlands of the Missouri River in Doniphan County, Kansas. The skins of the two birds are now in the collection of the University of Kansas Museum. I know of no published records for the occurrence of this species in Kansas, or for its occurrence in the fall in the Kansas City region.—JEAN LINDSALE, *Berkeley, California, April 28, 1926.*

Additional Notes on the Birds of Tillamook County, Oregon.—The following species, hitherto unrecorded from Tillamook County, Oregon, may now be added to the published notes on the birds of this region.

Wood Duck (*Aix sponsa*). This beautiful bird appears to be very scarce along the coast, and a fine male, secured at Oretown, November 11, 1925, constitutes my only authentic record of its occurrence here.

Rough-legged Hawk (*Archibuteo lagopus sancti-johannis*). A specimen that had been crippled by duck hunters was secured on Netarts Bay, October 25, 1925; and another, so badly damaged that it could not be preserved, was found dead on the ocean beach at Netarts, November 15, 1925.

Peale Falcon (*Falco peregrinus pealei*). A fine dark Peale Falcon was taken on Netarts Bay, October 26, 1924.

California Jay (*Aphelocoma californica*). On November 19, 1924, I followed one of these jays for a quarter of a mile, as it flew from telephone pole to telephone pole, along the highway a few miles southeast of Tillamook.

Shumagin Fox Sparrow (*Passerella iliaca unalaschensis*). A fox sparrow taken at Blaine, February 1, 1923, was referred to this form by Mr. H. S. Swarth.

Short-tailed Mountain Chickadee (*Penthestes gambeli abbreviatus*). A mountain chickadee, an unusual visitant to the coast region, was taken on the camp ground on the ocean beach at Netarts, December 17, 1924. This was identified as *abbreviatus* by Mr. H. S. Swarth.—ALEX. WALKER, Tillamook, Oregon, May 20, 1926.

The Ivory Gull in Colorado.—While being shown our bird collection a few weeks ago, Mr. Guy Jonas, of Jonas Bros., Taxidermists, informed me he had secured a gull which he was unable to identify. I showed him all the birds likely to appear in Colorado, and as he was sure none answered the description of his specimen, I stopped at his store to see it. I was surprised, naturally, to find a beautiful immature Ivory Gull (*Pagophila alba*).



Fig. 49. IVORY GULL, FIRST COLORADO RECORD; TAKEN IN ADAMS COUNTY, JANUARY 2, 1926.

The bird, a male, now no. 11700, of the Colorado Museum of Natural History, was presented to the Museum by Mr. Coloman Jonas. The exact date of taking is uncertain, but it was first seen the evening of December 30, 1925, and was found dead "a few days later". In order to have a definite record, we will call the date January 2, 1926. It was taken in Adams County, Colorado, at a place fifteen miles north of Strasburg, and approximately fifty miles east of Denver, by Mr. Ross Bliss. It measures as follows, in millimeters: culmen 32; wing 338; tarsus 36; tail 129.

Because of the rarity of the species away from the Arctic ice-pack, the taking of this specimen is of unusual interest. I wrote to Mr. Bliss for information, and he replied as follows: "I first saw the gull on the evening of December 30, 1925, about sundown, right by the side of our house. As it was such a pretty bird, I called my mother to see it. It didn't appear very wild so we tried to catch it and almost succeeded in doing so, but it flew away, and as it was so snowy white, I lost track of it. I found it dead a few days later while hunting rabbits. I have decided its apparent

tameness was because it was nearly exhausted when we tried to catch it. I took it to Mr. Jonas because I thought it was a very rare bird in these parts, and I wanted to know what it was. He told me it was a sea gull but didn't think it very rare or of much importance. He was afraid it wouldn't be of any value as I had kept it too long, so I told him to do what he could with it. I heard from him later, and he said it came out all right, for which I am very glad. I live in Adams County, Colorado, fifteen miles north of Strasburg and about fifty miles from Denver. There is no body of water near here."

Mr. Guy Jonas, who mounted the bird, said it was extremely emaciated. This is the first record of the Ivory Gull for Colorado and, I believe, for the inland United States.—ALFRED M. BAILEY, *Colorado Museum of Natural History, Denver, April 5, 1926.*

The Distribution of the Races of the Ruby-crowned Kinglet.—The Ashy Kinglet, *Regulus calendula cineraceus* Grinnell, though described many years ago, has never won a place in the A. O. U. Check-List, possibly because Arizona ruby-crowned kinglets are even paler than the race described by Dr. Grinnell, or, possibly, because no one has worked out the ranges of the various races with an adequate series of specimens.

Specimens in my collection would give the distribution of the various races as follows:

Regulus calendula calendula. Breeds from Nova Scotia to Yukon and northern British Columbia north of the coast mountains (nos. 4366, 4206), and winters south to Florida (13825), and Travis County, Texas (12927). Occurs west to central North Dakota in migration (32838-41); passes south through Sumas, British Columbia (12308), Jackson County, Oregon (38407-8), and Mendocino (19589-90), Siskiyou (27759) and San Mateo counties (10390), California, to Carmel, Monterey County (34599-600). Passes north through Butte County (17996, 17998) in March. Some specimens from Santa Barbara are intermediate with *cineraceus*.

Regulus c. cineraceus. Breeds commonly at Okanagan, British Columbia (ten taken between April 12 and September 16, including two in juvenal plumage, July 31 and August 13, 1921, J. A. Munro), and occurs in winter or migration in southern California west at least to Santa Barbara County and north to Butte County (17997), south to Chihuahua (21197-8) and Coahuila (22231-2), Mexico, and east to Brownsville, Texas (21634), and Colorado (7420), and Salt Lake City, Utah (34730).

Regulus c. grinnelli. Breeds in British Columbia (4147) and southern Alaska (4132). Occurs in migration east to Okanagan, British Columbia (26056), south to Santa Barbara, California (31330), and accidentally to Redlands, San Bernardino County (9287, not typical). Winters at least as far north as Jackson County, Oregon, and passes south through Del Norte (27758, 38409-13, and 27984) and Mendocino counties (19586-8), California.

Regulus c. obscurus. Confined to Guadalupe Island, Mexico.—LOUIS B. BISHOP, *Pasadena, California, May 19, 1926.*

EDITORIAL NOTES AND NEWS

The date for the next annual meeting of the American Ornithologists' Union has been set as October 12-14, and the meeting is to be held in Ottawa, Canada. We already know of five westerners who are definitely planning to attend this meeting, and there will doubtless be others. Anyone desiring further information concerning it should make enquiry of Mr. Hoyes Lloyd, who is Secretary of the Local Committee of the A. O. U., in charge of the Canadian meeting of 1926; address him care of Canadian National Parks, Department of the Interior, Ottawa, Canada.

We are pleased to announce that Mr. Harry Harris, until recently of Kansas City, has now become a permanent resident of California—a case of east-to-west migration, it will be observed. Mr. Harris has become associated with the Los Angeles Museum of History, Science and Art, becoming Membership Secretary of the Museum Patrons Association. Incidentally, this gives full opportunity for Mr. Harris to give valuable service to the Cooper Club, in the Business Manager's office, along with Mr. W. Lee Chambers.

Word comes from Mr. Joseph Dixon that he has obtained a set of the eggs of the Surf-bird, up until now, so far as known, absolutely lacking in any oological collection of the world. Mr. Dixon is carrying on field work in the Mount McKinley district of Alaska, under the combined auspices of Mr. John E. Thayer and the Museum of Vertebrate Zoology.

An increasing number of bird students are becoming interested in the formation of ornithological libraries. This means a rapidly advancing market value of nearly all books and serials relating to birds. Not many years ago a certain book that we are thinking of could be had for \$6.00; now there is a standing offer of \$25.00 for it. We would remind collectors of books that many of the publications coming from the press today will be the rarities of the future. The minor ornithological serials, most especially, are due to be "out of print" very shortly. Although such periodicals may be issued in considerable numbers of copies, most of these quickly disappear; few people save sets of the periodicals to which they subscribe. Such a series as "Yosemite Nature Notes", or "The Gull", is sure soon to possess high market value, that is, for a set kept intact.

Satisfactory progress is being made toward final publication of the Fourth Edi-

tion of the American Ornithologists' Union "Check-list of North American Birds." The A. O. U. Committee on Nomenclature is actively at work on this enterprise which, naturally, involves a much greater amount of labor than either of the preceding editions, since the first. The amount of literature that must be gone over in establishing the known ranges of the birds, down to date, is enormous. Then there is the matter of bringing the classification into accord with the latest findings of students of phylogeny. When the Fourth Edition appears, it is to be hoped that it will be adopted everywhere as the standard authority for the names of North American birds.

A CLOSE SEASON ON GOLDEN EAGLE EGGS.—The following letter from an officer of the State Fish and Game Commission was sent out, early in the season, to collectors in southern California, and in general was probably heeded, in the interest of future "crops" of eagle eggs if for no other reason.

"Conditions in San Diego County as regards the golden eagle deserve your consideration. Numerous sets have been taken through a term of years. Even though no diminution in numbers of the birds may be evident at present, yet with a long lived bird the real results of continuous removal of the eggs are likely to appear in the future, and suddenly. Furthermore, many nesting sites have been located, and rivalry among collectors has become so keen that the real purpose and justification of collecting is being overlooked. As a consequence it is planned, with your coöperation, to afford the golden eagles of this county complete protection for 1926. An attempt has been made to include the golden eagle among the exceptions on all San Diego County permits. If any collector did not find this exception noted on his permit, it was an oversight in this office."

COMMUNICATION

SAVING RARE PARROTS IN CAPTIVITY

To the EDITOR of THE CONDOR,

Sir:

As you are, I believe, aware, I am much interested in breeding rare parakeets with the object of saving in captivity species that are threatened with extinction in a wild state. I have been trying to induce American aviculturists to take up the experiment, and have received considerable assistance from Mr. Charles Metzger of 6312 S. Ashland Avenue, Chi-

cago. Mr. Metzger is unable to keep any rare parakeets himself, but he has been most active in writing to possible helpers and in collecting information. Some of the facts that have come to light as a result of his enquiries are very interesting. In the first place the climate of California has been shown to be admirably suited to the success of the venture. Some of the more delicate species that are in urgent need of preservation have actually been bred in considerable numbers under conditions of aviary management I should consider far from ideal. Birds which, by reason of their quarrelsome disposition, I should never keep except in pairs, have been turned into an aviary with a number of their own kind and various other parakeets and yet have reared numerous young.

We have also ascertained that there are already in the hands of certain Californian aviculturalists stocks of Elegant (?) Grass Parakeets (*Neophema elegans*), Bourke Parakeets (*Euphema bourkii*) and perhaps Turquoise Parakeets (*Neophema pulchella*). All this is most encouraging, but there is another side to the picture. Few, if any, of the owners of these priceless avian treasures seem to have the least idea of their value. They just let them take their chances in a mixed collection, and sometimes clear them out to make room for the semi-domestic Budgerigar or for some other common species that happens to take their fancy. There seems to be a very general ignorance as to what parakeets are really rare, that is, rare in a wild state, and as to what are a legitimate source of pride to the breeder. Mealy Rosellas (*Platycercus pallidiceps*), which exist in thousands in Australia, may be as much valued as the rarest grass parakeets, simply because they happen to be temporarily scarce in the bird trade; while a person who has bred rare grass parakeets will often mention the breeding of the common and hardy Indian Ringnecks as though that were an avicultural feat of equal interest and calling for equal skill!

I should like to urge upon American naturalists the importance of making the most of their opportunities before it is too late. They have, in California, the right climate and conditions; that is a fact already demonstrated. They have also, on the spot, stocks of at least two species which are in urgent need of preservation. It is not unlikely that there are, at the present time, more Bourke Parakeets in California than there are wild in their native land, so exceedingly scarce has the species become in its natural state.

Surely it is worth while to get in touch at once with the owners of rare parakeets, impress upon them the importance and value of their birds, and make arrangements to buy from them all surplus stock they are willing to part with for a systematic breeding experiment to be conducted under the best conditions.

Up to the present, Mr. Metzger and I have not had much support when it comes to the question of the actual provision of the right type of aviary, that is, a moveable one of sufficient size, that occupies a fresh site each year and normally contains one breeding pair only. People with the means to build aviaries lack the inclination to do so and others who would like to save the birds cannot afford to build and have not the ground available. As in this country, there seems to be a strong prejudice in favor of the old type of fixed aviary, which is considered quite good enough, and the suggestion that a moveable aviary is a necessity is regarded as rather fanciful. In the case of England I have proved beyond any possible doubt that, except for Budgerigars, which are almost unique in their ability to withstand the bad effects of stale ground, moveable aviaries are indispensable to the rearing of generation after generation of healthy parakeets which do not deteriorate in stamina and fertility. I do not wish to be dogmatic about what is necessary in a climate as profoundly different as that of California, but it is at least possible that the evil effects of breeding in fixed aviaries may make themselves apparent in the long run, even though, for a few generations, no harm may seem to result. It is surely better to be on the safe side and start with an outfit which has been proved satisfactory, rather than leave anything to chance.

I might, perhaps, point out that any of the following are well worth breeding in view of their probable extinction in a wild state at no very distant date. The Fijian Masked Parakeet (*Pyrrhuloxia personata*); any of the parakeets of the genus *Cyanorhamphus*, of which the New Zealand *C. novae-zealandiae* and *auriceps* are the best known; the Australian Pileated Parakeet (*Porphyrocephalus spurius*); the Paradise Parakeet (*Psephotus pulcherrimus*); the Australian Night Parakeet (*Pezoporus wallieus*) if not, as is to be feared, already totally extinct; the Ground Parakeet (*Geopsittacus occidentalis*); Bourke Parakeet (*Euphema bourkii*); the Orange-bellied Grass Parakeet (*Neophema chrysogastra*); the Elegant Grass Parakeet (*Neophema ele-*

gans); the Rock Grass Parrakeet (*Neophema petrophila*); the Blue-winged Grass Parrakeet (*Neophema venusta*); the Turquoise Parrakeet (*Neophema pulchella*) and the Splendid Grass Parrakeet (*Neophema splendida*).

The first four *Neophemae* are easily confused by anyone not familiar with the genus, and to avoid the production of crossbred birds of no scientific interest the following distinctions should be borne in mind. The Orange-bellied is the greenest of the four; it has, as its name implies, a patch of orange on the belly, but this feature is frequently met with in brightly colored adult males of *elegans*, *venusta* and *petrophila*, so it is of no value for purposes of distinction. The most noteworthy point of difference is in the frontal band, which is of a not particularly intense blue and is wide and rather indefinite in shape, recalling a female Turquoise. The Elegant Grass Parrakeet has a narrow frontal band of intense blue; the wing shows a narrow strip of blue of two distinct shades, pale turquoise at the edge, dark farther in. This bird is commonly confused with the Blue-winged Grass Parrakeet, and many of the latter are sold as Elegants.

The Rock Grass Parrakeet is the most soberly colored of the genus. The prevailing color is a brownish olive green, and the blue areas on forehead and wing are smaller and less vivid than in the case of *N. elegans*.

The Blue-winged Grass Parrakeet is the only member of the genus that occurs in Tasmania (Gould appears to be in error in supposing that the Orange-bellied is found there) and it is the one which is most often caught and offered by bird dealers. It may readily be distinguished from the true Elegant by the fact that the blue wing patch is nearly twice the width and is all of the same dark shade.

In conclusion may I suggest that the preservation of a rare and beautiful bird is a matter of importance to all true ornithologists whose interest in bird life goes deeper than the mere study of museum skins. Many persons who live in the colder parts of the States, or who have no facilities for keeping live birds, might surely be willing to offer financial help. Unless they receive outside aid, Californian aviculturalists may not be able to do all that is needed to save the threatened species from final extinction.

Yours truly,

TAVISTOCK,

Warblington House, Havant, Hants, May 5, 1926.

PUBLICATIONS REVIEWED

THE LONE SWALLOWS, By HENRY WILLIAMSON. E. P. Dutton & Co., 681 Fifth Ave., New York, N. Y., 1926, 227 pp.

About a year ago Mr. Williamson published "Sun Brothers", a book exploiting all the romantic interest in nature, remaining at the same time intensely realistic. The present volume, "The Lone Swallows", is much in the same style and deals largely with the same *dramatis personae*, namely the falcons, the swallows, the wild flowers, and the people of southern England. The intermeshing of the threads of human, of animal, and of plant, destinies, is a favorite theme of the author, upon which he has made in the present instance a very readable book which should help in the struggle that seemingly must never cease if we are to preserve anything of natural beauty.

The ardency of a nature worshipper is evident throughout these chapters, and kindred spirits will thrill to many a telling phrase or convincing word picture in the book. In a few of the chapters the language is so loaded with metaphors that spontaneity is lost; but in general both writing and construction are good. Unusual words are fewer than in "Sun Brothers," and part of those employed are explained in the footnotes—an improvement. All in all, we like "The Lone Swallows" and wish its author continued power to write beautifully of Nature.—W. L. MCATEE, Washington, D. C., April 28, 1926.

TWO BOOKS FOR SERIOUS BIRD STUDENTS.

—There come from England (H. F. & G. Witherby, London) two books, of scope and merit that lead us to recommend them to every serious student of bird life. One is Heilmann's "The Origin of Birds"; the other is A. Landsborough Thomson's "Problems of Bird-Migration". These two books possess certain qualities in common: each is the result of thorough-going, scholarly research; each gives a digest of the basic facts; each gives bibliographies of all the authoritative literature in the field of its subject matter; and each gives the final, down-to-date conclusions, theoretical and factual, in regard to the problems dealt with.

Gerhard Heilmann, a Dane, besides being a paleontologist of attainment, is an artist. In his book he depicts, in restoration, the remotest ancestors of the birds of today. We see *Archaeornis* and *Hesperornis* clothed with feathers, each amid its natural surroundings; we are given

drawings of some of the Pseudosuchian types—structural details as well as restorations,—these curious vertebrates being thought to mark the first departure of the avian descent-line from the reptilian; we are given vivid word-pictures of the probable ways in which bipedal mode of walking, the use of the forelimbs as wings, the development of feathers, and the marvelous thermoregulatory system of modern birds developed from a quadrupedal, scaly, cold-blooded saurian.

A. Landsborough Thomson is the son of J. Arthur Thomson, who wrote the recent "Biology of Birds". Both men have done their work at the University of Aberdeen. The younger man has for some years been engaged in well-planned studies of bird migration, in part by the "marking" (banding) method. His present book is a conscientious summary of the facts and theories of bird migration down to date. We are led to take his statements and conclusions with entire confidence in their worthiness, when we find that the little segment of the literature on the subject with which we happen to be familiar has been handled by the author with accuracy as to fact and balanced judgment as to implication. The American contributors in the field of bird migration, J. A. Allen, Brewster, Cooke, and Watson and Lashley, are given full and fair consideration; as is also accorded the recent, important work of von Lucanus and others, in Germany. Here one will find discussed and variously disposed of, the various theories, some purely or chiefly romantic, which have accompanied the development of our present concepts of the ways and means of bird migration.

In conclusion, A. L. Thomson says: "The general biological issues which are raised strike much deeper, and are much wider in their application, than the immediate problems of bird-migration with which this book has had to deal. . . . To the general biologist bird-migration offers an especially interesting example of instinctive behaviour, and in its further study we may hope to find new clues to the deeper secrets with which he is ultimately concerned."—J. GRINNELL, *Berkeley, California, June 2, 1926.*

MINUTES OF COOPER CLUB MEETINGS

SOUTHERN DIVISION

MARCH.—The regular monthly meeting of the Southern Division of the Cooper Ornithological Club was held at the Southwest Museum, Marmion Way, Los Angeles,

at 8 P. M., Tuesday, March 30. The meeting was called to order by President Bishop with the following members present: Mesdames Edwards and Ellis; Miss Potter; Messrs. Allen, Appleton, Bishop, Michener, Miller, Rich, and Robertson. Minutes of the February meeting were read and approved and the February minutes from the Northern Division read. No applications for membership were presented.

A request was presented from the Northern Division asking for permission to call the meeting with the A. A. S. at Mills College in June, a meeting of the entire club. On motion of Dr. Rich the Southern Division agreed to such a designation of the June meeting.

A communication was read from the Danish Minister in Washington, D. C., asking that this club send delegates to the International Ornithological Congress to be held in Denmark, May 24 to 29 of this year. Inasmuch as the matter of delegates from this country is being handled by the American Ornithologists' Union, no action was taken.

Dr. Bishop, as speaker of the evening, presented three short papers, "The Races of *Regulus calendula*," "The Meeting Grounds of the California and the White-rumped Shrikes", and "Geographic Variation in Certain Limicolae". Dr. Bishop's discussion centered about the determination and identification of subspecies. The fact that anatomical character is as liable to slight climatic variation as is plumage, was emphasized in the case of the shore birds.

Adjourned.—ALDEN H. MILLER, *Secretary.*

NORTHERN DIVISION

MARCH.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology, Berkeley, on Thursday, March 25, at 8:00 P. M., with President Allen in the chair and more than sixty members and guests in attendance. Minutes of the Northern Division for February were read and approved. Minutes of the Southern Division for February were read. The name of William McClain Pursell, of no. 9, Eton Court, Berkeley, was proposed for membership by Hilda W. Grinnell.

An invitation was read from the Minister of Denmark to the Northern Division to send delegates to the International Ornithological Congress to be held at Copenhagen May 24 to May 29 of this year. Upon the motion of Mr. Kibbe, sec-

ended by Mr. Dixon, the Secretary was instructed to invite Dr. Alexander Wetmore to represent the Division at the Congress.

Attention of members was called to the first annual meeting of the Cooper Ornithological Club, to be held in Los Angeles early in April, and to the proposed meeting at Mills College on Thursday afternoon, June 17, in connection with the meetings of the Pacific Division of the American Association for the Advancement of Science.

Two members contributed interesting notes. Mr. Brighton C. Cain told of having watched Varied Thrushes feed upon the stipes of mushroom-like fungi and of having rescued two Screech Owls from the bottom of a forty-foot stovepipe; while Mr. James O. Wanzer told of having found the nest of a Great Horned Owl upon the ground and of finding, on March 6, the nest of a hummingbird containing two well-incubated eggs.

Mr. Joseph Grinnell gave an illustrated talk upon the "Bird-Life of Baja California". Of especial interest were the slides showing the variety and abundance of cacti, and Mr. Grinnell's account of the bird-life flourishing in that thorny environment. Adjourned.—HILDA W. GRINNELL, *Secretary*.

APRIL.—The April meeting of the Northern Division of the Cooper Ornithological Club was held in Room 212, Wheeler Hall, University of California, Berkeley, at 8:00 P. M., on Thursday, April 22, 1926. About 125 members and their friends met to listen to an illustrated talk by Dr. Brooke Nicholls upon "The Rare Egg-laying Mammals of Australia and the Marine and Bird Life of the Great Barrier Coral Reef." The speaker was introduced by Dr. Harold C. Bryant who spoke of Dr. Nicholls' boyhood life in Australia and his early interest in natural history. Dr. Nicholls' comprehensive talk and illustrations dealt in part with those two very interesting groups, the Monotremes and the Marsupials, filmed in their natural environment.

Following the lecture a short business session was held, presided over by President Allen. The name of Dr. LeRoy H. Briggs, 2635 Broderick Street, San Francisco, proposed by George W. Lane, was presented for membership. Members were reminded of the general meeting of the Cooper Club to be held at Mills College on June 17, 1926, in connection with the tenth annual meeting of the Pacific Division of

the American Association for the Advancement of Science.

The President stated that her attention had been called to the very fine exhibit of bird paintings assembled in Los Angeles for the first Annual Meeting of the Cooper Club, and she expressed a wish that a way might be found by which the paintings could be put on exhibition in San Francisco at the termination of their showing in the southern part of the state. Mr. Lastreto moved, seconded by Mr. Dixon, that the American Legion of Honor be approached in this matter by a committee appointed by the Chair. President Allen appointed, accordingly, Mr. Lastreto, Mr. Mailliard and Mr. Grinnell.

Mr. Kibbe brought before the meeting the fact that the migratory Game Refuge Bill has been favorably reported out of the Senate and House committees, and he moved that the Secretary be instructed to forward to members of Congress from California, resolutions urging favorable action. This motion was seconded by Mr. Mailliard. Dr. Evermann called attention to the fact that a certain faction is endeavoring to weaken the chances of survival of the Game Refuge bill by introducing another bill doing away with the connection of the Biological Survey as advisory administrator of the refuges provided for in the bill; whereupon Mr. Kibbe revised his resolution, which finally read as follows:

RESOLVED, that the Northern Division of the Cooper Ornithological Club reaffirms its conviction that the proposed Migratory Bird Refuge and Marshlands Conservation Act, H. R. 7479, Senate 2607, embodies a measure which is of vital importance in the preservation and development of our birds, for whose sustenance, propagation, and very existence, submerged refuges are indispensable; and

Further RESOLVED, that the administration of such refuges presents a biological and economic problem, into which mere sentiment does not enter; that it is a problem for trained specialists cognizant of the different and fluctuating conditions obtaining throughout the entire ranges of our migratory birds; and that, in the Bureau of Biological Survey, we already have a trained and competent agency for the unified control which alone can achieve the objects of this Act; and

Further RESOLVED, that the Northern Division of the Cooper Ornithological Club respectfully urge our Senators and Representatives to interest themselves in bringing said measure to a vote at the earliest possible time, during the present session; and

Further RESOLVED, that the Secretary be requested to transmit a copy of these resolutions to each Member of Congress from California.

The motion to adopt was unanimously carried.

The Chair then expressed the indebtedness of the Division to Dr. Nicholls for his most interesting talk and declared the meeting adjourned.—HILDA W. GRINNELL, *Secretary*.

For Sale, Exchange and Want Column.—Any Cooper Club member is entitled to one advertising notice in each issue free. Notices of over ten lines will be charged for at the rate of 15 cents per line. For this department, address W. LEE CHAMBERS, Drawer 123, Eagle Rock, California.

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WANTED—Bird and nest photographs for private album, not for publication. Send on approval; will exchange or purchase.—EDW. E. ARMSTRONG, 2249 Calumet Ave., Chicago, Ill.

FOR SALE—Coues, Birds of the Northwest, \$2.00; Widmann, Birds of Missouri, \$1.25; Bent, Life Histories: Anseres (part), \$2.50; Petrels, Pelicans, etc., \$2.00; Journal of Mammalogy, vol. I complete (5 numbers), vol. II, nos. 1, 2, 4, the lot \$5.00. **WANTED**—Nidologist, vol. I, nos. 2 and 6; Report, Chief, Biological Survey, 1893-1895, 1900, 1914; A. O. U. Check-List, third edition, 1910; Nuttall Bulletin, vol. I.—TRACY I. STORER, Zoological Laboratory, University Farm, Davis, Calif.

TO EXCHANGE—Bird and mammal skins of southern California for specimens from other localities.—PAUL E. TRAPIER, 3672 Mentone Ave., Palms, Los Angeles Co., Calif.

FRENCH OR GERMAN FIELDGLASSES, \$5 up; stereo-prism binoculars, 8-power, \$15 up. Mirakel 3 oz. universal focus monoculars with 20-power attachment that converts it into a microscope; 3½-power \$10; same in 5-power \$12.50. Watch for the new Mirakel 7-power, 7 oz. binocular, \$35. Everything in glasses from a Zeiss down. Satisfaction guaranteed after trial, or money refunded.—J. ALDEN LORING, Box O 182, O-we-go, Tioga Co., N. Y.

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EARTHWORMS.—I would like to collect earthworms for a worker in this group. There are many Philippine species, and very few of them have been described.—R. C. MCGREGOR, Bureau of Science, Manila, P. I.

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WILL EXCHANGE originals of my bird drawings (published, unpublished), in color, "wash" and pencil, for well-made typical skins of common birds, especially most of the smaller forms. Nos. 315 and 382 also wanted.—E. J. SAWYER, Park Naturalist, Yellowstone Park, Wyo.

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As regards the author, an important feature of his coöperation is to see that his *manuscript is as nearly as possible ready for delivery to the printer.*

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1. Manuscripts should be typewritten if possible; if not, they should be in *perfectly clear handwriting.*
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Respectfully submitted,

THE EDITORS OF THE CONDOR.

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